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CANADA

ROYAL COMMISSION ON

HEALTH SERVICES

1964—VOLUME 1

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ROYAL COMMISSION ON HEALTH SERVICES



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HEALTH SERVICES

1964 -- VOLUME 1

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1964

TO HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL,

MAY IT PLEASE YOUR EXCELLENCY,

We, the Commissioners appointed by an Order in Council dated 20th June, 1961, to inquire into and report upon the existing facilities and the future need for health services for the people of Canada and the resources to provide such services, and to recommend such measures, consistent with the constitutional division of legislative powers in Canada, as the Commissioners believe will ensure that the best possible health care is available to all Canadians:

BEG TO SUBMIT TO YOUR EXCELLENCY

VOLUME I OF OUR REPORT



Elizabeth the Second

BY THE GRACE OF GOD
OF THE UNITED KINGDOM,
CANADA AND HER OTHER
REALMS AND TERRITORIES

Queen

HEAD OF THE COMMONWEALTH,
DEFENDER OF THE FAITH

A handwritten signature in dark ink, appearing to read "D. S. Maxwell".

ACTING DEPUTY ATTORNEY GENERAL

A handwritten signature in dark ink, appearing to read "J. B. [unclear]".

DEPUTY ADMINISTRATOR

TO ALL TO WHOM THESE PRESENTS SHALL COME OR
WHOM THE SAME MAY IN ANYWISE CONCERN,

Greeting:

WHEREAS pursuant to the provisions of Part I of the Inquiries Act, chapter 154 of the Revised Statutes of Canada, 1952, His Excellency the Governor in Council, by Order P.C. 1961-883 of the twentieth day of June, in the year of Our Lord one thousand nine hundred and sixty-one, a copy of which is hereto annexed, has authorized the appointment of Our Commissioners therein and hereinafter named to inquire into and report upon the existing facilities and the future need for health services for the people of Canada and the resources to provide such services, and to recommend such measures, consistent with the constitutional division of legislative powers in Canada, as the Commissioners believe will ensure that the best possible health care is available to all Canadians and, in particular, without restricting the generality of the foregoing, to inquire into and report upon

- (a) the existing facilities and methods for providing personal health services including prevention, diagnosis, treatment and rehabilitation;
- (b) methods of improving such existing health services;
- (c) the correlation of any new or improved program with existing services with a view to providing improved health services;
- (d) the present and future requirements of personnel to provide health services;
- (e) methods of providing adequate personnel with the best possible training and qualifications for such services;
- (f) the present physical facilities and the future requirements for the provisions of adequate health services;
- (g) the estimated cost of health services now being rendered to Canadians, with projected costs of any changes that may be recommended for the extension of existing programs or for any new programs suggested;
- (h) the methods of financing health care services as presently sponsored by management, labour, professional associations, insurance companies or in any other manner;
- (i) the methods of financing any new or extended programs which may be recommended;
- (j) the relationship of existing and any recommended health care programs with medical research and the means of encouraging a high rate of scientific development in the field of medicine in Canada;

- (k) the feasibility and desirability of priorities in the development of health care services; and
- (l) such other matters as the Commissioners deem appropriate for the improvement of health services to all Canadians,

and has conferred certain rights, powers and privileges upon Our said Commissioners as will by reference to the said Order more fully appear.

NOW KNOW YE that, by and with the advice of Our Privy Council for Canada, We do by these Presents nominate, constitute and appoint Chief Justice Emmett M. Hall of the City of Regina, in the Province of Saskatchewan, Miss Alice Girard, Registered Nurse, of the City of Montreal, in the Province of Quebec, Doctor David M. Baltzan, of the City of Saskatoon, in the Province of Saskatchewan, Professor O. J. Firestone, of the City of Ottawa, in the Province of Ontario, M. Wallace McCutcheon, Esquire, of the City of Toronto, in the Province of Ontario, Doctor C. L. Strachan, of the City of London, in the Province of Ontario, and Doctor Arthur F. Van Wart of the City of Fredericton, in the Province of New Brunswick, to be Our Commissioners to conduct such enquiry.

TO HAVE, HOLD, EXERCISE AND ENJOY the said office, place and trust unto the said Emmett M. Hall, Alice Girard, David M. Baltzan, O. J. Firestone, M. Wallace McCutcheon, C. L. Strachan, Arthur F. Van Wart, together with the rights, powers, privileges and emoluments unto the said office, place and trust of right and by law appertaining during Our Pleasure.

AND WE DO HEREBY authorize Our said Commissioners to exercise all the powers conferred upon them by section 11 of the Inquiries Act and be assisted to the fullest extent by government departments and agencies.

AND WE DO HEREBY authorize Our said Commissioners to adopt such procedure and methods as they may from time to time deem expedient for the proper conduct of the enquiry and sit at such times and at such places in Canada as they may decide from time to time.

AND WE DO HEREBY authorize Our said Commissioners to engage the services of such counsel, staff and technical advisers as they may require at rates of remuneration and reimbursement to be approved by the Treasury Board.

AND WE DO HEREBY require and direct Our said Commissioners to report their findings to Our Governor in Council, and file with the Dominion Archivist the papers and records of the Commission as soon as reasonably may be after the conclusion of the inquiry.

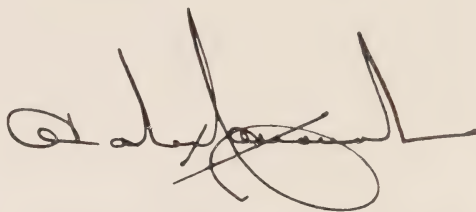
AND WE FURTHER appoint the said Chief Justice Emmett M. Hall to be Chairman of Our said Commissioners.

IN TESTIMONY WHEREOF We have caused these Our Letters to be made Patent and the Great Seal of Canada to be hereunto affixed.

WITNESS: The Honourable Charles Holland Locke, Puisne Judge of the Supreme Court of Canada and Deputy of the Honourable Patrick Kerwin, Chief Justice of Canada and Administrator of Our Government of Canada.

AT OTTAWA, this twenty-fourth day of July in the year of Our Lord one thousand nine hundred and sixty-one and in the tenth year of Our Reign.

By Command,

A handwritten signature in dark ink, appearing to be 'G. J. G.', with a large, sweeping flourish at the end.

ACTING UNDER SECRETARY OF STATE

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FOREWORD

Order in Council P.C. 1961-883 which set up this Commission charged us to inquire into and report upon the existing facilities and the future need for health services for the people of Canada, the resources required to provide such services, and to recommend such measures, consistent with the constitutional division of legislative powers in Canada, as the Commissioners believe will ensure that *the best possible health care is available to all Canadians*.

The Commission held public hearings in all Provinces and the Yukon.¹ Members of the Commission either singly or in groups studied at first hand the programmes and practices in other countries including the United Kingdom, France, Holland, Sweden, Switzerland, Austria, Italy, the United States, the U.S.S.R., Australia, and New Zealand. In the Canadian hearings we received submissions and heard representatives from 406 organizations or individuals. All major groups interested in health in Canada participated. We commissioned the preparation of 26 research studies² by outstanding Canadian scholars working either singly or in teams. These studies are being readied for publication where the information is considered to be of general usefulness and necessary to give a complete background to many of the matters dealt with in the Report.

We were impressed in the course of our inquiry with the deep feeling of conviction and the sense of urgency common to all who appeared before us about the need for careful planning and speedy and wise action to ensure continuing progress and improvement in the health field in Canada. There was no dissent to the view that some form of government action was needed to bring to all Canadians the best possible health care. There were divergent opinions as to how this objective could or should be attained and the extent to which governments should participate.

We were impressed also with the generally expressed views that to date Canadians have, by and large, enjoyed a comparatively high level of health services. We heard frequent references to serious gaps or inadequacies by virtually all who testified including those who spoke for The Canadian

¹ See Appendix D.

² See Appendix B.

Medical Association and its ten provincial branches; L'Association des Médecins de Langue Française du Canada and its Filiale du Québec; L'Association des Médecins-Chirurgiens en Pratique Générale du District Médical de Montréal; the ten Provincial Colleges or Councils of Physicians and Surgeons including the Collège des Médecins et Chirurgiens de la Province de Québec; L'Association Médicale de la Province de Québec; the Canadian Dental Association, its corporate bodies, and a few other dental associations including La Société Dentaire de Montréal, who were frank in acknowledging that remedial action was essential in many fields.

It became clear as we entered upon our hearings that two factors in particular were going to pose special difficulties. One was the haphazard approach of organizations and governments in the search for solutions to the problem of providing a measure of health care for Canadians. The second was the over-emphasis given to "medicare". This latter factor threatened to overshadow the broad purpose of the inquiry. No one would suggest that the payment of medical bills is not an important item, but it is after all but one item in the full range of health services and in any objective approach it could not be permitted to dominate the whole field.

There are many other areas in the health service field that cry out for improvement: mental illness, retarded children, crippled children, the crippling diseases, paraplegics, the aged and the infirm, dental services, and drug costs. All these and others must have their proper place in the plans for the future if the objectives outlined in the Order in Council are to be achieved. Positive preventive measures must be expanded and, in addition, educational and training facilities for physicians, dentists, nurses, and others must be provided at once to meet the needs of a rapidly expanding population.

During our hearings and while our research studies were underway, and as we deliberated on this Report, three provincial governments introduced legislation with respect to payment for physicians' services. Saskatchewan established an all inclusive plan on a compulsory basis attended by much needless friction with the medical profession of that Province. Two provinces, Alberta and Ontario, introduced legislation, not similar in form, but basically providing for voluntary coverage of certain medical services with subsidies for specified categories of citizens to help with the payment of premiums with such plans administered by private carriers, both profit and non-profit. The initiative shown by the three provinces is based, we believe, on the recognition that government action in the personal health care field is overwhelmingly desired by Canadians. But the different scope of the plans as announced by these three provincial governments, particularly the limitations of the Alberta and Ontario plans and the lack of harmony in Saskatchewan, point to the danger which Canada faces if health planning and health care coverage is left solely to the initiative and financial ability of

individual provinces without regard to adequate standards of health services for Canadians from one end of the country to the other, without adequate provision for the supply of physicians, dentists, nurses, and other health personnel, and health facilities to implement such a programme, and without making the most effective use of Canada's health resources both existing and those that will be forthcoming through integrated and co-operative health planning on a non-political Canada-wide basis.

So, in preparing this Report we have been at all times conscious of the mandate given us to investigate the whole field, and we have tried our best to see that the Report does not give primacy to any one area while at the same time recognizing that health services consist of many interdependent elements with the physician as the central figure. Co-operation of all elements must be of the essence of any properly conceived health service. The programme we visualize is rooted in this concept of close co-operation of all health services personnel with the physician and with the administering agency or agencies. It is a multi-phased approach to health services and to good health embracing (1) the education and training of sufficient personnel, (2) preventive measures, (3) diagnostic and curative procedures and (4) rehabilitative facilities, all integrated to achieve the best possible health care for *all* Canadians while at the same time fostering research into all elements of disease and good health.

How can this objective be best achieved? Through a haphazard and makeshift approach or by means of a well planned programme founded on basic principles which will allow for flexibility and change, but keep Canadians at all times striving towards the goal of the best possible health care for all. To us the answer is clear: we need a set of principles and we need to apply them with vigour and imagination and without hesitancy.

We present in Chapter 1 the basic considerations and general philosophy to be embodied in a *Health Charter* for Canadians. In Chapter 2 we present recommendations for a comprehensive health care programme which, if implemented, will contribute significantly to the improvement of the health of Canadians of this and succeeding generations. The principles and our recommendations are based on a thorough analysis in Chapters 3 to 12 of the health of the Canadian people, and the health services available to them, and on an extensive examination in Chapters 13 to 21 of health requirements and problems faced, and on an assessment of the costs of a health care programme over the next 30 years projecting present trends and allowing for changes such as we recommend.

We have excluded as beyond our Terms of Reference what are described as borderline areas relating to health,¹ such as social aspects of

¹ World Health Organization, *The Cost and Means of Financing Medical Care Services*, Geneva: The Organization, 1962, pp. 24 to 29.

health,¹ problems of ageing, non-prescribed drugs, environmental aspects of health,² and income maintenance during periods of ill health.

This is Volume I of our Report.³ It contains our major analyses and recommendations.⁴ It will be followed by Volume II which deals with other matters relating to our Terms of Reference including pharmacists, paramedical personnel, other personnel such as chiropractors, osteopaths, and naturopaths, the place of voluntary organizations in the provision of health services, the organization of health research, the role of health planning, the evaluation of existing programmes in the health services complex, and present and future problems in the patterns of organizing community health services and facilities.

The Commission as originally constituted named seven members. However, one of our number, The Honourable M. Wallace McCutcheon, Q.C., resigned from the Commission on August 8, 1962, on being appointed to the Senate of Canada and a member of the Government. Senator McCutcheon participated throughout the public hearings and in our deliberations prior to his resignation. His penetrating analysis of the problems before us and his co-operation in the search for solutions was of great assistance.

In preparing this Report we have had the assistance of a very competent research and administrative staff, and invaluable help from a large number of individual experts in the health professions, in governments, in universities, and other institutions. We acknowledge this help gratefully with details given in Appendix A.

¹ For example, training and employment of handicapped persons.

² For example, air and water pollution.

³ Because the quoted material contained in this Volume is taken from preliminary drafts of the studies set out in Appendix B, it may differ in form, but not in substance, from the corresponding material contained in the final version of these studies.

⁴ We have made allowances in our cost estimates presented in Volume I for expenditures relating to the recommendations included in Volume II. Any additional expenditures that may result from the recommendations in Volume II would be minor so that for practical purposes the cost figures as presented in this Volume can be taken as the cost of the over-all programme.

PART I

PRINCIPLES AND
RECOMMENDATIONS

Basic Concepts

Throughout the course of our hearings, the Commission was greatly impressed by the public response to our inquiry. Interested parties have presented an amazing variety of recommendations; of things to be done, or not to be done, as well as suggestions indicating who should or who should not do them. As we sifted through and analysed these recommendations we were impressed by the wide areas of agreement among Canadian citizens as to our most pressing health needs, on the present stage of our health services development, and on the necessity to extend the advantages of prepayment to all Canadians. Outstanding among our impressions was the constructive work of many voluntary agencies and the number of individuals contributing their services to them.

There was disagreement, on the part of some, as to the respective roles of individuals, of voluntary associations, of commercial enterprises, and of governments in health services. In a democracy such divergent views are to be expected.

Faced with these conflicting representations and charged by our Terms of Reference to make recommendations respecting the improvement of health services in Canada, it seemed essential for our purposes to resolve in so far as possible these various points of view by answering the fundamental question: What is society's interest in the health of its individual members? If we can answer that question satisfactorily we may then be in a position to better determine what legislative measures and programmes may be required to discharge society's obligations to the individual. We begin with and adhere to the view that the public interest, whatever its extent, is clearly supportive of the individual's interest in his own health. What, then, is the individual's responsibility?

INDIVIDUAL RESPONSIBILITY FOR HEALTH

The Commission believes that the individual's responsibility for his personal health and that of the members of his or her family is paramount to the extent of the individual's capacities. Briefs from the health professions and other experts, and studies by our research staff emphasize the wide scope that the individual has for the determination of his own health and well-being. With the near-disappearance of most communicable diseases, that

range of self-determination has increased. Personal hygiene, cleanliness in the home, balanced diets, precautions against accidents,¹ adequate rest, regular exercise, wise use of time for leisure and recreation; in short, temperate living—all of these are not only of first importance in the maintenance of health but are largely under the control of the individual, and in our opinion, are clearly his responsibility.

However, in this day of advanced medical knowledge and skill, these are not enough. The individual must assume responsibility for wise and prudent use of health services, for periodic health examinations, including regular dental examinations, for assuring that the mother receives complete pre- and post-natal care, for seeing that children are properly immunized, and at the first sign of symptoms for consulting a physician or dentist. The wise use of available health services cannot be over-stressed. Much serious illness and unhappiness would be avoided if this were done. It goes without saying that since all such resources are scarce, it is the duty of the individual, as well as of the practitioner prescribing them, to see that the services are used with prudence and economy.

There are other obligations. These services cost money; therefore the individual must also be prepared to assign a reasonable part of his income by taxes, premiums or both to meet the costs of health services which will be faced by every person during the course of his lifetime.

In addition, the individual must assume responsibility as a member of organized society for meeting a fair share of the costs of providing health resources for the nation including those which give him protection through environmental controls, the educational institutions that produce our supply of health workers, and the research institutions that advance our knowledge of life and disease processes and new methods of therapy.

These obligations and responsibilities we believe to be wholly compatible with the democratic concept of the individual in a free, self-governing society.

PUBLIC INTEREST IN INDIVIDUAL HEALTH

The public interest in health has been typically manifested by community action to deal with health problems that the individual was incapable of managing himself. In the past this meant community measures to prevent and control communicable diseases. Organized health activities in Canada originated in community efforts to stem the epidemics of the last century.

In recent decades, a number of factors have enlarged the scope of the public interest and given it new force and cogency.

¹ Health services provided to accident victims cost an estimated \$74,000,000 in 1961, see Chapter 5, Table 5-18. In the same year, over 11,000 people died in Canada from accidents, poisoning, and other acts of violence.

The first is a deepening of our humanitarian concern for our fellows. We recognize that the well-being and happiness of the society is simply the sum total of the well-being and happiness of its individual members. It is clear that the well-being of a proportion of the population at any given time is seriously curtailed because of mental or physical disease or impairment that, strictly by the laws of chance, could strike any one of us.

We seem, in a sense, to have become "insurance minded" in that we now believe that an individual family should not have to bear alone the full cost of risks that could happen to any one of us. Accordingly, if the resources of the whole can be used to strengthen the ability of families and individuals to manage and plan for themselves, then they should be so used.

The depression of the nineteen thirties with its mass unemployment, requiring massive national, provincial and municipal expenditures to help individuals regain their independence and self-sufficiency, probably did more to translate into action what is basically a Judeo-Christian philosophical concept than any other event of our era. Just as we have accepted that the costs of industrial accidents should be a charge upon the whole productive economy and not be borne by the injured workman and his family, so are we now accepting that society as a whole must help to bear the costs of accidents and disease that we know will strike the total population in predictable numbers, although we cannot foretell which of its members will be stricken. The almost immediate response of governments in the thalidomide tragedy is the most recent dramatic example, but everywhere throughout the land—as innumerable briefs to the Commission attest—there is an awakened conscience and a growing consciousness of the need for more organized assistance for those families carrying the unpredictable burdens of children with severe mental deficiency, children deformed or injured at birth or maimed in infancy, of members who are mentally ill, of members injured in accidents, of members who are aged and infirm. There is a growing consensus that since we do not know which of us may be afflicted, all should make a contribution to a common fund to assist those who are.

There is yet another major reason for an expanding public interest in health. It is the growing awareness of the cost to society as a whole of failure to be concerned and to act on behalf of its members. The most dramatic evidence was the rejection rates of armed services recruits in World War II. With the nation in peril, dependent upon its healthy man- and woman-power for survival, the price we were paying for our past lack of adequate health resources and services was glaringly apparent. The second most revealing piece of evidence was the Sickness Survey of 1951. It showed the appalling social and economic cost to Canada of ill-health, proving that the family and the nation pay heavily in terms of lost production for failure to make available to all Canadian citizens the standard of health service we

know how to provide. Nor is it only in loss of production¹ that we pay. Many of our so-called "welfare" expenditures are the end result of illness, disability, and premature death. Not all of these expenditures are avoidable, of course, but clearly many of them are.

To the extent, then, that health expenditures prevent or shorten periods of sickness, reduce the extent of disability, postpone death, and contribute to the productivity of citizens, then to that degree health expenditures are investments in our human resources, with the prospect of rich dividends.

There are also undoubtedly external forces causing us to explore new ways in which a democratic society can co-operate to enable its members and those of other societies to achieve a fuller life. One of these is the threat of totalitarian regimes with their professed greater concern for people. If a democracy fails to meet the legitimate aspirations of its people there can be few who doubt that alien philosophies will win the right to try. Another is Canada's membership in such special agencies of the United Nations as the World Health Organization, the International Children's Fund, the Food and Agricultural Organization, the International Labour Office, all in some measure related to health. Apart from being bound by the various international agreements it has ratified, it should be remembered that this country, by signing the Constitution of the World Health Organization, has subscribed to the following principles announced in the preamble to its Charter:

"The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.

"The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States."²

Thus, humanitarian considerations are at the source of Canada's concern with this situation as much as her self-interest and formal international obligations.

The Commission is convinced that, quite apart from humanitarian considerations, the health of Canadians is a matter of concern to us *as a nation*, and that no enlightened government can ignore that the economic capacity of its citizens to be productive depends upon their health and vigour as much as upon their educational attainment.

We accept the statement of Sir Arthur Newsholme:

"Civilised communities have arrived at two conclusions, from which there will be no retreat, though their full realisation in experience has nowhere been completely achieved.

¹ In 1961, an estimated total of 52,700,000 man-days was lost through sickness in the labour force.

² World Health Organization, *Constitution*, Geneva: The Organization, 1960, p. 1.

"In the first place, THE HEALTH OF EVERY INDIVIDUAL IS A SOCIAL CONCERN AND RESPONSIBILITY; and secondly, as following from this, MEDICAL CARE IN ITS WIDEST SENSE FOR EVERY INDIVIDUAL IS AN ESSENTIAL CONDITION OF MAXIMUM EFFICIENCY AND HAPPINESS IN A CIVILISED COMMUNITY".¹

Let us now examine the areas we consider to come within public and group responsibility.

PUBLIC AND GROUP RESPONSIBILITY

Responsibility for Environmental Health Services

Nearly a century of success with public health measures has removed all argument from the proposition that assuring a healthful environment is a public responsibility. Sewerage systems, pest control, assurance of pure water supply, pasteurization of milk, meat and food inspection, sanitary inspection of public eating establishments, public conveyances, and the like; all of these have made their contribution to lower morbidity and mortality.

With advancing knowledge of health measures that can be taken on a mass basis, the definition of *public* health is necessarily broadened. It ceases to be simply the traditional functions of public health departments—communicable disease control, sanitary inspection, maternal and child health, mental hospitals, health education, and statistics—and becomes any health problem that involves a sufficient number of individuals to become a *public* problem, and for the adequate solution of which public action is necessary or desirable. Hence, health services for indigents, cancer diagnostic and treatment clinics, mental health clinics, facilities for crippled children and for retarded children, tuberculosis sanatoria, rehabilitation centres, and the like, become accepted public health activities because it is now recognized that it is clearly in the public interest to undertake them. In our open society, with voluntary action serving as the mainspring for most progress, it has been typical for new areas of need to be first explored, the problem defined, and the solutions discovered or organized by voluntary agencies. Frequently, the volume of need thus revealed has been beyond the capacity of voluntary action to finance. At that point public demand for action results in government action, and the voluntary leaders turn their attention to other unmet needs that their experience has revealed. In this way, progress continues towards an ever-advancing goal of higher standards by reducing the universal hazards to mankind. We believe that this process of interaction of voluntary and public action and, hence, this progress, will continue.

¹ Newsholme, Sir Arthur, *Medicine and the State*, London: G. Allen & Unwin Ltd., Baltimore: Williams and Wilkins Co., 1932, p. 29.

Education of Personnel

The creation and operation of the educational institutions to provide society's increasing requirements for health workers, together with the subsidy required to ensure an adequate supply of qualified graduates, is clearly a public responsibility.

If it is accepted, as we accept, that the investment in health pays cash dividends as well as dividends in human well-being, then it is a public responsibility to ensure that the supply of health workers is expanded to meet essential needs. In some areas, a crash programme of expansion of facilities as well as of recruiting will be required. Dentistry and nursing are outstanding examples. Moreover, the public interest is not concerned simply with the production of numbers of health personnel; it is deeply concerned with the quality of education. For it is on the quality of their training that the quality of performance of their skills largely depends. We have much to say on this subject as well as on the need for continuing education in all the health professions.

One other aspect of the education of health professions demands comment. It is the anomaly that the training of our most essential health workers—the front-line medical practitioner—has depended upon there being a low-income or indigent group in our society to provide the essential clinical experience in “public wards” and “out-patient” clinics. We have not yet abolished poverty or indigency, but the training of society's essential professions can no longer rest on this limited, indigent base. It is now a *public* responsibility in the sense that every member of the public must accept the obligation, when hospitalized in teaching hospitals, to serve in the education process.

Provision of Facilities

Over \$133 million spent by the Federal Government on hospital construction since 1948,¹ and an even greater amount by the provinces in the same period, plus millions of dollars contributed by municipal governments and hospital taxing districts testify to the acceptance of the provision of health facilities as an area of the public interest.²

But it is an interest that has been acknowledged in a variety of ways and in a variety of degrees.

In the provision of hospital facilities, however, the history is a long and varied mixture. Private philanthropy and religious endeavour—these two (with the occasional military establishment being the exception)

¹ Department of National Health and Welfare, *National Health Grants, 1948-1961*, Ottawa: Queen's Printer, January 1962, p. 39.

² Facilities for the most vital function of all, that of the practising physician and dentist, have been left almost wholly as a private responsibility of the practitioner. “Setting up a practice” is still one more economic hurdle for the medical and dental graduate.

provided our first facilities for organized care, and they continue to this day. But in the western provinces, where a new society had the needs but not the philanthropic resources, recourse to the municipal tax base was unavoidable to supplement the efforts of the pioneer religious groups.

In the last few years, three factors seem to have altered the pattern: the rising costs of hospital construction, the effect of income taxes on philanthropic resources, and the transfer to the public sector of the financing of hospital operations. With this combination of factors (and there are undoubtedly others) hospital financing became increasingly a responsibility of governments although the proportion of costs assumed by government has varied markedly from province to province.

Hospitals for the mentally ill are for the most part a public (provincial) responsibility and hospitals for Veterans, Indians and Eskimos, largely a federal responsibility.

Despite the continuing importance of voluntary contributions, the provision of the facilities that Canadians require will obviously become primarily a public responsibility and we believe that steps should be taken to rationalize the system and equalize the burden.

Distribution of Personnel and Other Resources

Although we have been ever mindful of the present constitutional provisions respecting jurisdiction over health matters, we cannot ignore the unequal distribution of resources, particularly of personnel, to meet our health needs. And, as we have indicated, if there ever was a time when Canadians in one section of our country could be oblivious to lower health standards elsewhere in Canada, that time is *not now*. There is clearly an overriding *national* interest in the health of Canadians wherever they reside. We are a mobile people and illness knows no provincial boundaries nor other differences.

We are convinced that, however much we prefer voluntary to public action, nothing but public action and support at every level of government can correct the imbalance.

It is necessary, therefore, to view the distribution of health resources—personnel and facilities—as a primary concern of the public interest. Specific recommendations to achieve adequate national standards are presented in Chapter 2.

Prepayment for Health Services

This century has witnessed tremendous strides in the science and art of medical care in its widest sense. But as medical knowledge, skill and techniques have advanced, so have the costs of their application. Were it not for the device of prepayment, only a few at the top of the income scale in Canada could emerge from serious illness or injury without being finan-

cially crippled. The rationale of health insurance is now so well known and accepted that it scarcely needs restating. What Winston Churchill once described as "the application of averages for the relief of millions" is, in our opinion, absolutely essential for all but a small minority of wealthy Canadians. Many Canadians have availed themselves of the insurance mechanism, principally those who can afford the protection or those who are in employment where coverage is provided or subsidized as part of their working conditions. However large this group may be it is not large enough. The national interest requires that the risk must be spread over the whole productive population to cover everybody and not only those who choose to insure voluntarily. And the device must be used ultimately to finance the whole spectrum of health services, not merely hospital and physicians' services. To make certain that all our citizens have access to the necessary health services is now clearly a matter for the public interest. That less than half of our population has some degree of reasonably adequate health insurance coverage for medical services is a matter of grave national concern, and of greater concern is the fact that few organized insurance programmes worth mentioning exist in equally important areas such as mental illness, dental, and optical care, drug requirements, retarded and crippled children.

These are the areas—environmental controls, education, facilities, personnel, and universal availability and access to services—that now clearly constitute the public interest in health care and call for public action.

OBJECTIVE

As we examined the hundreds of briefs with their thousands of recommendations we were impressed with the fact that the field of health services illustrates, perhaps better than any other, the paradox of our age, which is, of course, the enormous gap between our scientific knowledge and skills on the one hand, and our organizational and financial arrangements to apply them to the needs of men, on the other.

What the Commission recommends is that in Canada this gap be closed. That as a nation we now take the necessary legislative, organizational and financial decisions to make all the fruits of the health sciences available to all our residents without hindrance of any kind. All our recommendations are directed toward this objective.

There can be no greater challenge to a free society of free men.

The Commission believes that this goal should be incorporated in a declaration of purpose, and recommends that the following Health Charter be accepted as an objective of national policy for Canada.

HEALTH CHARTER FOR CANADIANS

The achievement of the highest possible health standards for all our people must become a primary objective of national policy and a cohesive factor contributing to national unity, involving individual and community responsibilities and actions. This objective can best be achieved through a comprehensive, universal Health Services Programme for the Canadian people,

IMPLEMENTED in accordance with Canada's evolving constitutional arrangements;

BASED upon freedom of choice, and upon free and self-governing professions and institutions;

FINANCED through prepayment arrangements;

ACCOMPLISHED through the full co-operation of the general public, the health professions, voluntary agencies, all political parties, and governments, federal, provincial and municipal;

DIRECTED towards the most effective use of the nation's health resources to attain the highest possible levels of physical and mental well-being.

1. "Comprehensive" includes all health services, preventive, diagnostic, curative and rehabilitative, that modern medical and other sciences can provide.
2. "Universal" means that adequate health services shall be available to all Canadians wherever they reside and whatever their financial resources may be, within the limitations imposed by geographic factors.
3. "Health Services Programme" consists of legislative enactments and administrative arrangements to organize comprehensive universal health care including prepayment arrangements for financing personal health services introduced in stages. Such a programme will provide complete health care with due regard to human factors and the spiritual, social, economic and regional forces intrinsic in the Canadian way of life.
4. "Canada's evolving constitutional arrangements" take into account the primary jurisdiction of provincial governments with respect to health matters including staging, scope and administration of health services, as well as the necessity for federal financial assistance to enable each of the provinces to implement a comprehensive, universal Health Services Programme.
5. "Freedom of choice" means the right of a patient to select his physician or dentist and the right of the practitioner to accept or not to accept a patient except in emergency or on humanitarian grounds.

6. "Free and self-governing professions" means the right of members of health professions to practise within the law, to free choice of location and type of practice, and to professional self-government. With respect to "institutions" it means academic freedom for medical, dental and other professional schools, and for hospitals, freedom from political control or domination and encouragement of administration at the local level.
7. "Prepayment arrangements" means (a) financing within a province by means of premiums, subsidized premiums, sales or other taxes, supplements from provincial general revenues and (b) by federal grants taking into account provincial fiscal need.
8. "Full co-operation" means
 - (a) the responsibility of the individual to observe good health practices and to use available health services prudently;
 - (b) the responsibility of the individual to allocate a reasonable share of his income (by way of taxes or premiums or both) for health purposes;
 - (c) the methods of remuneration of health personnel—fee-for-service, salary or other arrangements—and the rates thereof should be as agreed upon by the professional associations and the administrative agencies and not by arbitrary decision, with an appeal procedure in the event of inability to agree;
 - (d) the maintenance of the close relationship between those who provide and those who receive health services, safeguarding the confidential nature of that relationship;
 - (e) the provision of educational facilities of the highest standards and the removal of financial barriers to education and training to enable all those capable and desirous of so doing to pursue health service careers;
 - (f) the adequate support of health research and its application;
 - (g) the necessity of retaining and developing further the indispensable work of voluntary agencies in the health care field;
 - (h) the efforts to improve the quality and availability of health services must be supplemented by a wide range of other measures concerned with such matters as housing, nutrition, cigarette smoking, water and air pollution, motor vehicle and other accidents, alcoholism and drug addiction;
 - (i) the development of representative health planning agencies at all levels of government, federal, provincial, regional and municipal, and integration of health planning.

COURSE OF ACTION

This is what Canada and the provinces working together should do. It is not an idealist's dream but a practical programme within Canada's ability, financially and practically, as subsequent chapters will show. It is what Canadians ought to strive for and expect through their governments. They should not be content with less.¹ A nation that in 1962 spent \$756 million on cigarettes and tobacco and \$973 million on alcoholic beverages² can afford the programme we recommend which would involve an additional \$466 million in 1971.³

The Health Services Programme which we have set forth is a distinctive Canadian development in harmony with our constitutional division of legislative powers. The federal and provincial governments must each play their part, and in so doing promote the national well-being. Such a programme, we believe, will be a major contribution to equalizing the opportunities for our citizens wherever they live.

We urge Canadians not to become involved in a battle of semantics. In recommending the programme we have proposed, we have steered clear of the views of those on the extreme right or extreme left. We are opposed to state medicine, a system in which all providers of health services are functionaries under the control of the state. We recommend a course of action based upon social principles and the co-operation and participation of society as a whole⁴ in order to achieve the best possible health care for all Canadians, an aim that Canadians by their individual efforts cannot attain.

Such action, we insist, is based upon freedom of choice on the part of the citizen, and on services provided by free and self-governing professions. By safeguarding these elements, so vital to a free society, we believe we have avoided the difficulties inherent in a programme which attempts to nationalize the services which one group provides for others.

We must reiterate, however, that the comprehensive universal Health Services Programme we recommend requires careful planning, wise use of the resources at our disposal, and acceptance of the principle of prepayment whereby all Canadians can be provided with health services.

¹ The United Church of Canada has taken the stand that "a Medical Insurance Plan should be *universal* (including all citizens within its provisions); *comprehensive* (including various medical and related needs in co-operation with the medical, nursing, dental, pharmaceutical and other related professions); and *national* (with the various provincial plans co-ordinated in a nation-wide plan)". *The United Church of Canada*, brief presented to the Medical Services Insurance Enquiry, Toronto, January 1964, p. 2.

² Dominion Bureau of Statistics, *National Accounts, Income and Expenditure 1962*, Ottawa: Queen's Printer, 1963, p. 58.

³ See Chapter 2 and Chapter 20. This amount is in addition to that which will likely be spent in 1971 with existing programmes.

⁴ John XXIII, *Mater et Magistra*, New York: Paulist Press, 1961.

We recognize, of course, that this whole programme cannot be put into effect immediately or simultaneously in all provinces. We do not foresee the programme coming forth full-grown but rather as an orderly and well-planned series of steps which taken together will in a period of years accomplish our objective.

The first requirement is sufficient trained personnel. This demands crash programmes¹ to expand the educational and training facilities. These must be undertaken at once because it takes a period of years to qualify physicians, dentists, nurses, and others, and we must be ready to provide services to the expanding population of Canada which we estimate will be 22,600,000 in 1971, 28,250,000 in 1981, and 35,100,000 in 1991.² We cannot wait until we are overwhelmed before acting.

Quick action too should be taken in the field of mental illness and we have specific recommendations in this long neglected field.

Retarded children and crippled children should be given high priority.³ Their parents must have the support of society as a whole.

A programme to help the aged and the infirm can be put into operation as we move forward in other fields.

The unsatisfactory dental health of the nation and particularly of its children must be attended to as soon as personnel can be trained in one of these crash programmes.

The burden of drug costs must be faced and redistributed.

Research facilities must be provided and personnel trained and research fostered.

While we are aware that shortages of physicians, dentists, nurses, and other paramedical personnel will make it difficult to establish the full Health Services Programme the Charter envisages, none the less the fact that there are shortages must not be used as an excuse to delay initiating programmes and plans. The various provinces should act promptly to co-operate with the Federal Government in planning and putting into operation the new medical schools, dental schools, nursing schools, and training institutes which are needed to overcome these shortages.

All of these matters will require careful planning and the fullest co-operation at all levels of government and with the health professions. It follows that the advisory and planning councils we recommend in Chapter 2 should be agreed upon and chosen following a Federal-Provincial Health Conference *which we urge should be called within six months* by the Federal Government. The responsibility for leadership must be accepted by the

¹ Our success with crash programmes during World War II shows that much can be accomplished when the will to do so exists.

² See Chapter 4.

³ See Chapter 2, Recommendation 200(c).

Federal Government and plans made so as to ensure that every phase of the development of the programme is consistent with its over-all objective. The unity of the programme and its application to all Canadians must be safeguarded.

We do not suggest that the various provincial programmes be required to conform to any rigid pattern, but to qualify for federal support they need to provide, in whatever manner may be chosen, universal coverage in the province regardless of age or condition, or ability to pay, upon uniform terms and conditions, and to adhere to the basic inclusive features of each of the programmes recommended.

Recommendations

Our Terms of Reference required us in general “to recommend such measures, consistent with the constitutional division of legislative powers in Canada, as the Commissioners believe will ensure that the best possible health care is available to all Canadians”.

In applying the principles which we have set forth in the Health Charter in Chapter 1, and after considering carefully the evidence presented to us, we have formulated a Health Services Programme as set out in Recommendation No. 1 on page 19. The details and methods of developing this Programme are set out in the Recommendations Nos. 2 to 200 under the following headings:

I. Health Services

1. Health Services Programme: Principles and Policies (No. 1)
2. Mental Health, Alcoholism, and Drug Addiction (Nos. 2-28)
3. Medical Services (Nos. 29-38)
4. Dental Services (Nos. 39-57)
5. Prescription Drug Services (Nos. 58-82)
6. Optical Services (Nos. 83-94)
7. Hospital Services (The Hospital Insurance and Diagnostic Services Act) (Nos. 95-112)
8. Prosthetic Services and Appliances (Nos. 113-115)
9. Home Care Services (Nos. 116-123)

II. Health Personnel, Facilities and Research

10. Nurse Education and Recruitment (Nos. 124-139)
11. Medical Education and Recruitment (Nos. 140-154)
12. Dental Education and Recruitment (Nos. 155-173)
13. Health Professions University Grant (No. 174)
14. Health Facilities Development Fund (Nos. 175-176)
15. Health Sciences Research Council (Nos. 177-185)
16. Health Statistics (Nos. 186-189)

III. Financing and Priorities

17. Over-all Financing (Nos. 190-195)
18. National Health Grants (Nos. 196-198)
19. Priorities (Nos. 199-200).

We conclude this chapter with a brief quantitative assessment of the health personnel, health capital, and health expenditures involved in undertaking the Health Services Programme which we envisage for Canadians for the period 1961 to 1991.

I. HEALTH SERVICES

1. Health Services Programme: Principles and Policies

We have given careful consideration to the question of health services costs, and, as we see it, the problem facing the Canadian people is not solely the financing of physician services, but the full range of essential services—mental, medical, dental, hospital, pharmaceutical, nursing, prosthetic, home care, and optical. On the basis of the evidence before us, we believe that government action is imperative, and that the nation's resources should be mustered to establish universal, comprehensive health services programmes in the ten provinces, the Yukon, and the Northwest Territories.

However, we have had to recognize that it would be impossible to introduce immediately universal programmes for dental and optical services due to the shortage of personnel. We have, therefore, limited our recommendations in these two fields primarily, but not solely, to children's programmes.

To meet the objectives stated, joint Federal-Provincial action on a broad health front is imperative. The case for such action is overwhelming when we consider how far we are from where we might be. As indicated in Chapter 1, there is probably no other area of basic human need where our organizational and financial arrangements have fallen so far short in making available to all our people what science has discovered and professions know how to do.

The course of action is clear. It is to extend the very successful pattern of joint Federal-Provincial co-operation in hospital services to bring all personal health services to the entire population. The comprehensive programme should be based on similar principles. It should be universal; it will require Federal financial assistance; health funds should be used not only to pay for services, but also to provide more resources and to improve

the quality of care given; wherever possible emphasis must be on prevention; and we must also give higher priorities to rehabilitation services so that individuals become self-supporting and families are restored to independence. Although we have come to the conclusion that Federal and Provincial governments must take the lead, it is essential that all the resources of voluntary agencies be co-ordinated in achieving the objective of "the best possible health care for all Canadians".

The Commission recommends:

1. **That the Federal Government enter into agreements with the provinces to provide grants on a fiscal need formula to assist the provinces to introduce and operate comprehensive, universal, provincial programmes of personal health services, with similar arrangements for the Yukon and the Northwest Territories. The programmes should consist of the following services, with the provinces exercising the right to determine the order of priority of each service and the timing of its introduction:**

Medical Services

Dental Services, for children, expectant mothers, and public assistance recipients

Prescription Drug Services

Optical Services, for children and public assistance recipients

Prosthetic Services

Home Care Services

In addition we propose a complete reorganization and reorientation of the mental health services and important changes in the Hospital Insurance Programme.

Although nursing services are not dealt with as a separate service, it is obvious that they constitute an important element in hospital and home care programmes. We believe it essential for the effective co-ordination of health resources that nursing be administered as an integral element of each of these services.

In implementing these programmes, the Commission believes that the following principles and policies, consistent with the concepts and objectives set out in Chapter 1, should obtain:

- (1) The grants should be based, as in the case of the Hospital Insurance Programme, on actual costs of services, with incentives for economy, and there should be, as well, adjustment grants to take account of provincial fiscal need.

- (2) The grants should also be designed to help bring the ratio of health personnel to population in all provinces up to an acceptable standard.
- (3) Coverage of health services should be continuous with portability of benefits assured to individuals moving from province to province, and wherever the services are rendered.¹
- (4) The finances for the Programme must be sufficient to provide a high level of remuneration to health personnel, for the health professions must attract and retain a larger proportion of young people in the future than they have in the past.
- (5) All administrative organization and procedures must be directed to maintaining and enhancing free, independent, and self-governing professions.
- (6) As in the hospital insurance programmes, all personal health services should be universally available on uniform terms and conditions for all residents.
- (7) Administration at the provincial level should be a Commission representative of the public, the health professions, and Government, and reporting to the Minister of Health, and it should also assume administration of the hospital insurance plan in the province. In a province where a voluntary prepayment agency operates, we recommend that such an agency may be used as the administrative vehicle augmented by additional representation of the public, the health professions and Government.² The Deputy Minister of Health should be, "ex-officio", a member of the Commission and because of the inter-relation of health and welfare, the Deputy Minister of Welfare should also be a member, "ex-officio". There should be committees representative of the various professions to advise on professional matters and the members of these committees as well as the professional members of the Commission should be appointed only after consultation with the respective professions.
- (8) The Federal Government should share in the administrative costs of the Health Services Programme to a maximum not to exceed five per cent of its total contribution.
- (9) There must be carefully designed statistical reporting on all services so that the programmes can be evaluated, their short-comings revealed, and new directions planned.

¹ Federal and provincial authorities should study the question of coverage for Canadians serving abroad by Federal-Provincial agreement.

² *The Government of Manitoba*, brief submitted to the Royal Commission on Health Services, Winnipeg, 1962, p. 11.

- (10) Provision must be made at local, regional, provincial, and federal levels for representative Health Planning Councils to ensure democratic participation in the setting of goals and objectives and the meeting of human needs.
- (11) The administration of health services for Indians and Eskimos should be entrusted to the provinces, and health services provided for them in the same manner and of the same quality as those enjoyed by other Canadians.

2. Mental Health, Alcoholism, and Drug Addiction

MENTAL HEALTH

Of all the problems presented before the Commission, that which reflects the greatest public concern, apart from the financing of health services generally, is mental illness—case finding, diagnosis, treatment and rehabilitation.

From the briefs and testimony presented to the Commission, two major conclusions can be reached. The first is that in the past general ignorance on the part of society of the nature of mental illness has led to a "ghetto attitude" towards those affected. Treatment of the mentally ill has been for too long characterized by callousness and neglect. The second conclusion is that we are in the midst of a great period of transition, perhaps just at the beginning of that period, in which not only are public attitudes rapidly changing, but that very change is making positive action possible and the outlook for treatment results hopeful if not actually optimistic.

The public interest manifested to the Commission was extraordinary. The concern of volunteers and professionals in such organizations as the Canadian Mental Health Association, the Canadian Association for Retarded Children and others was both admirable and encouraging.

But despite all this evidence of positive change in public attitudes, it is not enough. The rate of change must be accelerated. There must be an immediate end to the distinction that some still make in attitudes towards those who are mentally ill and those who are physically ill. There must be developed an increasing awareness of the possibilities in improved treatment. There must be more wide-spread understanding of the tremendous cost to the economy and to society resulting from the lack of contribution of the mentally ill and the length of their treatment.¹

¹ It is estimated that some ten per cent of the population, or about 1.9 million persons, may be suffering from psychiatric and emotional disorders of varying degrees, with an average daily number of patients in institutions of about 69,000. See Chapter 5.

Only with strong public support that comes from such understanding will we be able to make the gains that now appear possible. We believe that, fortunately, the Canadian people are now ready and that the necessary public support will be forthcoming.

The problem of mental disorder may be divided into two major categories: (a) mental retardation or deficiency and (b) psychiatric illness.

Unfortunately in many institutions insufficient effort has been made to separate what are essentially educational services for the mentally retarded on the one hand and health services for the mentally ill on the other. Nor has there been an adequate range of services available to either group.

Personnel

From an examination of the personnel resources for actively treating mental illness as distinct from our present pattern of providing largely custodial care, it is evident that there are serious shortages of psychiatrists, neurologists, clinical psychologists, psychiatric nurses, and psychiatric social workers. Since, in the treatment of mental illness, personnel are far more important than buildings and equipment, an all-out attack must be made on these shortages.

The Commission recommends:

2. That as part of a seven year crash programme, Professional Training Grants of \$5,000 per year be made to medical graduates preparing for their specialist certificates in psychiatry, neuro-psychiatry, paediatric psychiatry, and neuro-surgery.
3. That as part of the same crash programme, Professional Training Grants of \$3,000 per year be made available to university graduates specializing in clinical psychology and psychiatric social work, and to registered nurses specializing in psychiatric nursing.
4. That as part of the same crash programme, Professional Training Grants of \$3,000 per year be made available to qualified university graduates in education for post-graduate work in psychology, especially in abnormal psychology, and for special work in teaching the mentally handicapped child.
5. That medical schools be granted funds to conduct special courses in psychiatry for general practitioners and that the Provincial Colleges of Physicians and Surgeons and the College of General Practice give high priority to such courses in their programmes of continuing education.

Research

But it is not only in personnel that mental health services are lacking. The major deficiency in dealing with mental disorder is in research. Although important work is going forward in a number of centres, much more needs to be done. Moreover, the Commission is convinced that not only do we need more research into the basic causes of mental illness; we need more critical evaluation of the effectiveness of the treatment programmes we now pursue.

The Commission recommends:

6. That increased public funds be made available through the Health Sciences Research Council and increased private funds be contributed to assist official and voluntary agencies and the universities to expand co-ordinated programmes of research into the causes of mental illness and mental retardation as well as to evaluate community programmes and present treatment services in these fields.

The Mentally Retarded

The mentally retarded can be grouped, roughly, in three categories:

- (1) the mildly retarded, with I.Q.'s ranging from 50 to 75,
- (2) the moderately retarded, with I.Q.'s ranging from 25 to 49,
- (3) the low grade mental defective, with I.Q.'s ranging below 25.¹

It is important to distinguish the emotionally disturbed intelligent child from the mentally retarded. Unfortunately, there is evidence that through lack of early or accurate diagnosis, the emotionally disturbed child and the child with defective vision or hearing are too often categorized as mentally retarded. It is imperative that community resources be increased to obtain early diagnosis because lack of proper treatment impairs the chances for rehabilitation. These resources include community mental health clinics, consulting psychologists in the school system, and psychiatric units in large paediatric hospitals or units.

For too long mentally defective children have been segregated in large institutions, sometimes even housed with the adult psychotically ill. We believe that a more positive approach must be taken, following along the lines advocated by the Canadian Association for Retarded Children.

¹ Canadian Association for Retarded Children, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, pp. 7 and 8. Other classifications of the mentally retarded are discussed in Chapter 8.

The Commission recommends:

7. That in view of the extreme importance of early diagnosis of mental illness and especially mental retardation in children, e.g., as in the case of phenylketonuria, all children be examined shortly after birth.¹
8. That consulting clinical psychologists be appointed to all large urban school units and that health regions appoint clinical psychologists who will be available as consultants to schools in small towns and rural areas.
9. That the majority of mentally retarded children, i.e., the mildly retarded, not be segregated in institutions but remain at home, in the community, and be educated in special classes in the regular school programme.
10. That communities provide sheltered workshops where the mentally retarded may find employment after the school-leaving age.
11. That the moderately retarded be trained in special nursery-type day schools, and at the young adult age be given employment, when possible, in sheltered workshops.
12. That the wholly-dependent or low grade group be cared for at home if practicable and if the necessary home care services can be made available as a community service so that the parents or guardian may be assisted in providing constant care for the child. This should include separate nursery-type day care centres to which these children should be transported at public expense. If and when care at home becomes impracticable, the child should be transferred to a small hospital unit of not more than about 100 beds, located in the same general area, and cared for as part of the mental health programme.

The Mentally Ill

Treatment services for mental illness comprise a broad spectrum ranging from the family physician, clinical psychologist, psychiatrists, to community mental health clinics, psychiatric wards or wings in general hospitals, and the mental hospital.

For our purposes it is important to note that some but not all medical care insurance plans pay for services by private psychiatrists, and that the national Hospital Insurance and Diagnostic Services programme shares

¹ The implementation of this recommendation in the case of phenylketonuria would bring substantial savings in treatment costs of from 80 to 90 per cent. Further, about 100 children annually would be saved from life-long suffering from mental retardation (see Transcript of evidence, *Hearings*, Vol. 5, November 1, 1961, pp. 1236 and 1237).

in the costs of hospitalizing patients in psychiatric units in general hospitals, but not in mental hospitals which, by and large, are financed wholly by provincial governments.

The Commission has received numerous representations urging that the exclusion of "hospitals for the mentally ill" in the Hospital Insurance and Diagnostic Services Act be removed. Most provincial governments have urged this amendment since the first draft of the legislation appeared.

This request, the Commission believes, touches the very core of mental illness treatment. The Commission takes the view that the financial provisions of the national Hospital Insurance and Diagnostic Services programme should be used in such a way as to improve this treatment. We believe that adequate treatment of mentally ill patients cannot be properly achieved in large, isolated, segregated, undifferentiated mental "asylums". We believe that most mental illness requiring hospitalization at all should be treated in general hospitals, in special wings of them, or in small regional psychiatric hospitals of up to 300 beds adjoining a general hospital. We also believe that the costs of all such treatment for mental illness should be recognized as a shareable cost by the Federal Government.

We believe that provinces should move with all due speed to remove all patients receiving or capable of receiving active care from mental hospitals and transfer them to general hospitals.

But this will obviously require time. We believe it can be accomplished by 1973 if we begin immediately to build additional psychiatric wings or units in most large general hospitals at the rate of approximately 1,300 beds per year, to reach a total by 1973 of about 14,000 such beds.

With the accomplishment of this objective by 1973, we can expect that a much larger number of patients will be treated in a given number of beds because of the shorter length of stay. However, there will remain a large number of custodial patients, now in mental hospitals, who will not be transferred to active treatment, psychiatric hospitals or units. If possible, these patients should be moved to other appropriate facilities, some of which are available and others we recommend to be established. The Commission has noted with great admiration the work of many voluntary agencies in providing homes for the aged and believes that this is one of the most important projects that voluntary organizations might undertake.

The Commission recommends:

- 13. That the Hospital Construction Grant regulations under the Health Facilities Development Fund be amended immediately to provide one-half the cost of construction of psychiatric wards or wings in all general hospitals over 100 beds in size, or of small regional psychiatric hospitals with up to 300 beds, adjacent to general hospitals,**

including the requisite out-patient facilities, and the small units for the mentally retarded.

14. That federal and provincial authorities designate those wards of existing mental hospitals in which patients are clearly receiving active or convalescent care as a "hospital" or "facility" under the Hospital Insurance and Diagnostic Services Act, commencing January 1, 1965, so that these costs will be shared.
15. That the number of beds in the said ward or wards of each existing mental hospital so recognized be "reduced" by at least one-fourth, effective January 1, 1969, by at least one-half, effective January 1, 1971, and by at least three-fourths, effective January 1, 1973, and that all such recognition be removed by December 31, 1974.
16. That no grants be available for any new hospital for the mentally ill that is larger than 300 beds.
17. That salaries or sessional fees for psychiatrists directing these hospital wards or regional hospitals be accepted as a shareable cost under the Hospital Insurance and Diagnostic Services Act.
18. That the psychiatric units, wings, or regional hospitals have organized out-patient departments, in-patient treatment and consultative service, twenty-four hour emergency service, and "day" and "night" care programmes.
19. That each such unit develop a rehabilitative services properly staffed with psychiatric social workers and psychiatric nurses, and that this service be fully co-ordinated with other community health and welfare services.
20. That the development of homes for the aged and domiciliary services and foster home services be accelerated and that these be co-ordinated with other geriatric services in the community.

ALCOHOLISM

The serious and growing problem of alcoholism requires special consideration. Although it is estimated that 2,000 out of every 100,000 Canadians manifest an alcoholic problem, only a small percentage make use of the few, overly taxed facilities available. The Commission is greatly impressed by the work of voluntary organizations, and especially that of Alcoholics Anonymous.

However, the problem of treatment, like mental illness itself, is exacerbated by our lack of knowledge of the causes of the disease and methods of prevention, as well as of the efficacy of present treatment methods.

Clearly, in addition to expansion of services there is urgent need for more fundamental research as well as evaluation. Since both the Federal and Provincial Governments derive substantial revenues from taxes on sales of alcoholic beverages, a much higher proportion of these revenues than is now allocated should be expended on research and evaluation.

The Commission recommends:

- 21. That provincial governments increase their grants to foundations of alcoholism research and treatment agencies and universities and that the Federal Government match their grants. Research should be expanded at all levels: biochemical, neuro-physiological, psychological, and social.**
- 22. That professional personnel be given Professional Training Grants for advanced study at various alcoholism institutes.**
- 23. That special facilities be made available in general hospitals for handling the acute stages of patients' specific episodes and for psychiatric evaluation of the underlying causes.**
- 24. That specialized after-care services be developed and full advantage taken of other community services.**

DRUG ADDICTION

Drug addiction is a symptom of an underlying personality disorder combined with the influences of the social environment.

Because of the complex psycho-social background of the symptoms, treatment of drug addiction must proceed in a variety of ways.

The Commission recommends:

- 25. That psychiatric services in prisons and penitentiaries be improved to deal adequately with the problem of addiction and other psychiatric disorders.**
- 26. That at least one general hospital in the larger centres should have a non-penal unit for the withdrawal and treatment of addicts, and to which addicts may go voluntarily for help while withdrawing from their addiction. Some experimentation in the registration of addicts and in providing them with narcotics under strict medical and narcotic control supervision might be undertaken. This would remove the profit incentive from drug peddling. It is this profit motive which encourages the vicious drug trafficker to recruit new addicts even among the high school population to maintain and expand his market.**

He creates customers who must steal or turn to prostitution for the money needed to pay the exorbitant prices which prevail in the underworld. This social status forced on most drug addicts creates a secondary problem making withdrawal and reformation virtually impossible.

- 27. That there be established a community after-care programme in those centres where such is needed and where they do not now exist.**
- 28. That substantial grants for research into the epidemiological and psycho-social aspects of addiction be made by the Health Sciences Research Council.**

3. Medical Services

With almost the total population becoming entitled to prepaid hospital services, the next essential service to be organized is care provided by physicians and surgeons and some ancillary services all of which we refer to as "medical services".

It was evident in our hearings that by and large Canadians believe that they have been well served by their physicians and other health personnel. We heard the virtues of other programmes praised and we were asked to recommend for Canada systems and programmes which have worked well in other lands. We think we should state at the outset that it is our conclusion that the quality of medical services available to Canadians compares favourably with the standards prevailing in other advanced industrialized nations. It does not follow from this that there are no deficiencies. There are grave deficiencies; gaps that challenge the imagination, creative capacity and skills of a people emerging as an industrial leader among the nations of the free world.

Although we agree with those who urged us to take cognizance of successful experience elsewhere in the world, which we have done, we do not believe that our deficiencies can be remedied by trying to transplant to Canada an entire programme or system, however well it may have worked elsewhere. Rather, we must develop here an indigenous programme that builds upon the resources we have and that accords with our traditions and the historical development of health services in Canada. This is fundamental in all our proposals. The capitation system of paying physicians in England, strongly recommended to us, is a case in point. After examining that system, we have concluded that it would be unworkable in Canada because it depends upon the historical division between general practitioners and specialists. Canada has not had the separation of general practice in the doctor's "surgery" or home and the hospital-based specialist practice that prevails in England.

In Canada both the general practitioner and the specialist have always had a close hospital connection. The specialist has not been, as a rule, on hospital salary. Some practise both as specialists and general practitioners. This travelling of divergent paths for upwards of half a century has solidified customs and practices so different in Canada from those in England that it is now neither practical nor desirable to try to impose a capitation system on Canadian medicine.¹ It works well in England. The profession there as a whole is satisfied and wants no major change.² It will be remembered that capitation already in use in England in the last century through the Friendly Societies was extended by Lloyd George's Act of 1911 to cover the small wage earner, then a substantial segment of the population, became much broader in 1931, and universal for the payment of general practitioners in 1948. It was a logical development in line with established custom and practice.

The capitation system as practised in England is used in Holland but not in West Germany or Sweden, both of which use a basic fee-for-service plan. Capitation was used in Denmark until it was abolished in 1961 in favour of the fee-for-service system. Norway, Sweden, Switzerland, France and Australia are among the countries that operate principally on what is called the reimbursement system. With the exception of Norway, it appears to be a feature of most reimbursement systems of paying for medical services that no schedule of maximum fees is agreed with the profession. We do not believe that the reimbursement system could be transplanted into Canada any more successfully than the capitation system. Historically the fee-for-service system has become the method generally used in Canada. In recommending the use of the fee-for-service method in a health service for Canada, we wish to stress that it must be based on a schedule of maximum fees agreed to with the profession in each province and that medical services be paid for on such agreed schedules and not on any arbitrary percentage of the schedules. Extra billing would not be permitted.

We believe that the procedures for the provision of medical services in Canada established by those medical care prepayment plans operating on a "service contract" basis have demonstrated their effectiveness and the possibility of low cost administration. Their experience has enabled these plans to develop not only effective organization and efficient administration but also to evolve other features essential in the operation of a programme of this sort. Thus they have efficient systems for enrolling both groups and

¹ Another example of the different patterns of service is the fact that in England 37 per cent of all deliveries occur outside the hospital compared with 2 per cent in Canada in 1962 (communication from Department of National Health and Welfare).

² *Royal Commission on Doctors' and Dentists' Remuneration 1957-1960*, London: Her Majesty's Stationery Office, Cmnd. 939, 1960; and Medical Services Review Committee, *A review of the Medical Services in Great Britain*, London: Social Assay.

individuals, for processing and paying accounts, for record keeping, and for techniques to control over-utilization and over-servicing. However, deficiencies have become apparent in this type of contract in that many millions are excluded because of age, pre-existing physical or mental conditions or inability to pay the premiums. Then too, contracts are terminable at the option of the carrier and some provide for extra billing. Until the recent introduction of the extended health benefit plans as an alternative to the limited traditional coverage, these plans covered physicians' services only.

What we seek is a method that will provide everybody in Canada with comprehensive coverage regardless of age or state of health or ability to pay, upon uniform terms and conditions. We recommend that the medical services benefits come into effect only when provinces with approximately half of Canada's population are ready to implement them, a condition similar to that prevailing at the introduction of the Hospital Insurance and Diagnostic Services Act.

We do not believe, however, that all final answers have been found, and provision must be made for continuing experimentation and the introduction of new methods. There is a strong case for organization of medical (and hospital) services on a regional basis (e.g., the Swift Current Health Region) in order to facilitate such experimentation and variety. For example, although we have assumed that the basic method of payment for physicians and surgeons will be "fee-for-service", other methods and combinations of methods should be tried, and adopted where they appear desirable.¹

Again, the basic pattern for provision of medical (and dental) services will likely rest for some time on solo practitioners. Nevertheless we believe that the advantages of group practice so far outweigh the disadvantages that the programme should offer such inducements that a larger proportion of physicians and surgeons provide their services through group practice clinics.

It may be argued that how medical personnel provide their personal services is strictly their own affair, but there are cogent reasons why this matter is also of interest to consumers and society as a whole. The first is the matter of quality, for it has been demonstrated beyond reasonable doubt that the team practice of medicine where there is continuing professional contact by a physician with his confrères does tend to improve quality. Moreover, the group practice of medicine brings together physicians, often of diverse and highly developed skills, and the necessary supporting auxiliary workers and technical equipment necessary for the modern practice

¹ As in frontier or "under-doctored" areas.

of medicine. The concentration of the equipment and auxiliary workers results in their more efficient use. This, together with the fact that physicians can assume responsibility for more patients than in solo practice, results in lower unit costs for higher quality care. The consumer has, therefore, an interest in economy because it is he who foots the bill. The society has an interest because group practice raises productivity.

We believe that long-term loans at reasonable rates should be made available for the development of group practice facilities, and that provision might be made for accelerated depreciation of capital expenditures for income tax purposes. We believe also that subsidies should be available for small group practice clinics in rural areas so that health personnel (and their patients) may obtain some of the advantages available or becoming available to urban residents. Subsidies may be of different kinds: basic salary, office accommodation, residence, transportation, or others.

One further problem requires some comment. We have affirmed our belief in free self-governing professions. Certain licensing and disciplinary functions are exercised by Provincial Colleges of Physicians and Surgeons. These provincial colleges derive their authority from provincial legislatures and act as an arm of government in the spheres of activity allotted to them. In some provinces the functions of the Provincial Colleges of Physicians and Surgeons are not clearly separated from those of the provincial division of the Canadian Medical Association, the voluntary body concerned with the common interests of its members and such matters as public relations. We believe that the provincial colleges should be clearly separated from the voluntary association or associations, and we also believe that the disciplinary powers of the provincial colleges ought to be extended so that they may have the authority to ensure that all medical and surgical practice is of high quality.

The Commission recommends:

- 29. That henceforth all discrimination in the distinction between physical and mental illness in the organization and provision of services for their treatment, and the attitudes upon which these discriminations are based be disavowed for all time as unworthy and unscientific.¹**

¹ Acceptance of this key principle apparently continues to elude the insurance industry as is indicated in the submission of spokesmen for the Canadian Health Insurance Association to the Medical Services Insurance Enquiry of the Province of Ontario, given at Toronto, January 29, 1964 (Proceedings, pages 1141 and 1142), adhering to the position taken by the Association before us at Toronto on May 16, 1962 (Proceedings, Volume 54, pages 10264-10269).

30. That the medical services benefit include the services of general practitioners and specialists, provided in the office, hospital, patient's home, and group practice clinic.

The medical services benefit should incorporate the following insured services:

- (a) medical services—the diagnosis and treatment of all physical and psychiatric conditions including mental retardation;
- (b) surgical services—diagnosis, pre-operative care and treatment, surgical procedures and post-operative care rendered to a person requiring or receiving a surgical operation or procedure, including the services of a surgical assistant where required by the nature of the procedure;
- (c) maternity services—obstetrical care, including pre-natal and post-natal care and attendance at confinement;
- (d) new-born care—routine care of the new-born;
- (e) specialist services—all services provided by a physician who is a specialist, and psychodiagnostic and psychotherapeutic services rendered by a properly qualified psychologist with special training in these areas;
- (f) anaesthesia—the administration of anaesthetics including:
 - (i) anaesthesia for diagnostic, surgical and other procedures;
 - (ii) obstetrical anaesthesia;
 - (iii) dental anaesthesia in hospital;
 - (iv) dental anaesthesia in dental surgeries where rendered by a physician;
- (g) X-ray, laboratory and other diagnostic procedures, including interpretations;
- (h) preventive medical services:
 - (i) inoculations and vaccinations where those services are not provided through a government agency;
 - (ii) periodic physical examinations, but not including examinations for the purpose of marriage, insurance or employment, or at the request of a third party;
- (i) blood transfusions as required;¹

¹ See discussion of Red Cross Blood Transfusion Service in Chapter 8.

- (j) dental services where provided by a dentist in conjunction with maxillo-facial surgery;¹
- (k) prosthetic and orthotic devices, appliances, or aids when prescribed;²
- (l) physiotherapy where provided by a physical therapist upon the order of a physician;
- (m) podiatric and chiropractic treatment when prescribed by a physician;
- (n) ambulance services and similar forms of transportation of patients, except as may be designated as part of any other health service benefit;
- (o) any other services specified by a Federal-Provincial agreement.

The following services should not be included as insured services:

- (a) services received by a beneficiary under provincial Workmen's Compensation legislation;
- (b) services received by a beneficiary under other provincial legislation;
- (c) services received by a beneficiary under other federal legislation;
- (d) services rendered by a physician pursuant to an arrangement for rendering services to the employees of an employer or to members of an association;

¹ We have noted the submission made by the Royal College of Dental Surgeons of Ontario and The Ontario Dental Association to the Medical Services Insurance Enquiry in connection with Bill 163, An Act Respecting Medical Services Insurance, that "there are many services residing within the legal and academic competence of dentists which are frequently rendered by physicians". The point was made that a plan which would entitle the beneficiaries to such "services when they are performed by a physician, but would deny entitlement for the same services when they are performed by a dentist", would be "both unjust and discriminatory". (Brief reprinted, *The Ontario Dental Association Journal*, Toronto: January 1964, Vol. 41, p. 7.)

There are two reasons for limiting our recommendations above to include in the first instance only dental services where provided by a dentist in conjunction with maxillo-facial surgery. The first is the extremely limited supply of dental specialists trained in oral surgery and the high priority we attach to the children's dental programme which is likely to make substantial demands on the comparatively small number of dental oral surgeons practising in Canada.

The second reason is the difficulty of defining for administrative purposes dental oral surgery without opening the way to claims for all tooth extractions and similar work done by dental oral surgeons. Overcoming the shortage of dental oral surgeons and the administrative problems involved will take time and effort. This is an area where further exploratory work should be undertaken on a co-operative basis between governments, the dental profession and other interested groups with a view to resolving the problems encountered in this specialized field. Payments to dental oral surgeons could then be made for specified services as may be provided under Federal-Provincial agreements. (See Recommendation 30 (o) above.)

² These would include all forms of bracing, including corrective splints and boots made specially on prescription for persons for whom standard footwear is inadequate. (See also Recommendation 113.)

- (c) travelling by a physician except under circumstances specified by a Federal-Provincial agreement.
31. That the basic method of paying for medical services provided by physicians in private practice be fee-for-service, and that other methods and combinations of methods be experimented with and adopted where they are agreed upon as being more suitable.
 32. That the schedule of maximum fees or other payments should be that negotiated between the medical association and the respective provincial administrative agency without extra billing. Provincial legislation should provide for an appeal procedure in the event of disagreement.
 33. That subsidies chargeable to the Health Services Programme be used to attract physicians to rural areas.
 34. That loans be made available under the National Housing Act for financing facilities for "group practice clinics" on the basis of terms as provided for new houses.
 35. That the capital cost allowance provisions governing the construction and equipping of group practice clinics be amended to permit capital costs to be written off at twice the rate permitted under present regulations.
 36. That in order to provide the best possible health care under the circumstances to residents of isolated, northern and other regions, special services be made available including air ambulance, two-way radio communication, additional nursing stations and medicine depots.¹
 37. That the medical services benefits shall not come into effect until two or more provinces containing approximately one-half the population of Canada have entered into an agreement to provide the medical service benefits and the provincial law in relation thereto is in force.
 38. That in all provinces the College of Physicians and Surgeons be separately organized from the provincial division of the Canadian Medical Association and that the power of all provincial medical licensing agencies be extended to give them sufficient authority to ensure that medical and surgical practice is of high quality.

¹ We are greatly concerned with the need for providing health services, the best possible under the circumstances, to the people in the sparsely settled rural and remote areas of this country, particularly the northern regions. Impressive progress has been made by federal, provincial, religious and other voluntary agencies against the hazards of a forbidding geography and climate, but much more remains to be done. In these areas we have to take into account the rapidly changing technology of travel and communications. At present we envisage that two-way radio communications accessible to residents of these areas would enable them and the public health nurse to consult or call a physician at a base point. (See Chapter 13.)

4. Dental Services

As the evidence in Chapter 13 indicates, the shortage of dentists in Canada is so acute that, however desirable and necessary it may be, it is impossible to think at the present time in terms of a programme of dental services for the entire population. In fact, so serious is the shortage that we recognize that the proposals we are about to make will be difficult to achieve. Nevertheless, we believe it imperative to make a beginning and that beginning should start with the new generation.

ORGANIZED PROGRAMME FOR CHILDREN

There should be introduced as quickly as organization and recruitment can be accomplished a dental programme for children using the services of dentists and dental auxiliaries. In the first year, say, 1968, all children aged five and six would be entitled to dental examination and restorative services, including, where necessary, referral to orthodontic and other specialists. In the second year, 1969, all children aged four, five, six and seven would be entitled to services, and in the third year, 1970, all children from three to eight. In each of the following years a succeeding single year age group should be added.¹ By 1980, all children up to the age of 18 would be entitled to services and all children then 18 would have had regular dental care throughout their formative years.² We should like to see the children's programme introduced in all provinces simultaneously so that children moving from one province to another do not lose continuity of service. In addition, any province that has the resources should be encouraged to accelerate the programme.

We have no illusions about the difficulties and problems that this decision will create. Financial resources must be made available to attract dental personnel into this programme on a large scale.

Furthermore, we are aware of the problems created by the necessity to exclude from the programme older children in the same family in which a younger child is entitled to services under the programme. For this reason we believe that the programme must be financed solely from Federal and Provincial general funds. That means there must be no specific "premium" for this programme. We also believe this programme to be so important that it cannot await Federal Government and Provincial Government decisions on the comprehensive health programme as a whole and of which this benefit might be considered a part. This programme must have one of the highest priorities among all our proposals.

¹ This phasing is similar to the suggestion of the Canadian Dental Association in their brief submitted to the Royal Commission on Health Services, Ottawa, 1962, pp. 42-44.

² See Chapter 13 for a discussion of utilization of this service.

If the dental resources of the nation have been expanded as we recommend, it may be possible to consider in the nineteen eighties a general dental programme for the adult population based on appropriate arrangements with all dentists in private practice.

The Commission recommends:

39. That the National Health Grants Programme be expanded to include a Children's Dental Health Grant to provinces to provide for dental services for children aged five and six years, in the first year, children aged four to seven in the second year, children aged three to eight in the third year, with the succeeding one-year age group to be added each subsequent year; the grant to be large enough to make provision each year for at least two examinations and the evident necessary care for each child.
40. That a Dental Construction and Equipment Grant be established under the Health Facilities Development Fund to provide funds for dental clinic facilities in hospitals, public health centres, schools, or other health facilities, for the purpose of the recommended programme and, where necessary, equipment for travelling dental clinics, the Federal share to be 75 per cent of the cost to 1969, and 50 per cent thereafter.
41. That the Federal Government provide matching funds under the National Health Grants Programme to meet the costs of the programme, including the employment of dentists on either a full-time or sessional basis to direct the work of the clinics and provide continuing supervision of the dental auxiliaries, the employment of dental auxiliaries, the costs of referrals to specialists, and the operating costs of clinics, including transportation of personnel and equipment to outlying centres. In areas where none of the above-mentioned arrangements is feasible, special arrangements should be made with dentists in private practice. The remuneration for dentists in this programme as in all other programmes employing dentists should be competitive with incomes in private practice.
42. That dental public health educational programmes be organized and actively promoted in all health regions or units in the nation.
43. That the Health Sciences Research Council establish, as part of a continuing system of health statistics in Canada, a dental health survey including the maintenance of the dental health index established by the Canadian Dental Association.

- 44. That special consideration be given to the dental requirements of children suffering from physical or mental handicaps and the frequent need to admit them to hospital in order to provide essential dental treatment.**

FLUORIDATION

As recommended above, a dental programme for children must proceed with all due speed. But, as we have indicated, dental personnel are in such short supply that we will not in our generation have sufficient dental resources to meet our total needs. The only possible effective solution is to reduce our needs, as well as to enhance our resources. Fortunately, the now proven method of fluoridation by the use of a controlled quantity of fluoride in community water resources goes beyond a remedy; it does more by preventing a high proportion of dental caries ever appearing at all. We have heard the evidence of the dental profession, and we have examined other evidence including the thorough and factual report of the Ontario Committee on Fluoridation.¹ The evidence, now garnered over 30 years is that the technique of fluoridation properly controlled is effective, inexpensive and safe. Wherever it has been adopted² the savings in dental costs have been impressive; and the reduction of human suffering equally great.

The Commission recommends:

- 45. That every community water system in Canada be immediately equipped to provide, and does provide, the approved level of fluoride.**
- 46. That the Federal Government provide under the Health Facilities Development Fund a grant to the provinces of 75 per cent of the cost of equipment and installation for fluoridating community water supplies.**
- 47. That the Health Sciences Research Council provide for research and evaluation studies for the purpose of assessing the efficacy of fluoridation and the Children's Dental Programme.**
- 48. That the Federal Government immediately provide for fluoridation of all water supplies in areas or institutions under its jurisdiction, viz., the territories, the armed forces establishments where children are located, and the like.**

¹ Report of the Committee Appointed to Inquire Into and Report Upon the Fluoridation of Municipal Water Supplies, Toronto, 1961.

² In Canada, in 1963, about 3,800,000 persons or 20 per cent of the population had mechanically fluoridated water (see House of Commons Debates, Ottawa, March 23, 1964, p. 1333).

- 49. That in rural areas where community water systems are non-existent the public health authorities adopt means for meeting fluoride needs.¹**

MATERNAL DENTAL HEALTH PROGRAMME

There is a third area in which we believe there is an over-riding public interest. It is the dental health of expectant mothers. The high incidence of dental defects among expectant mothers is well known. The Commission believes that as soon as dental manpower resources have been increased by the establishment of additional dental schools, this group in the population should receive special consideration.

The Commission recommends:

- 50. That a programme of dental services for expectant mothers, with services provided by dentists in private practice, be introduced as a benefit of the Health Services Programme in 1971, or as soon thereafter as it is deemed that dental manpower resources are adequate to meet the needs.**

DISTRIBUTION OF DENTISTS

Apart from the general shortage of dentists in Canada, the most serious problems arise from the acute shortage in small towns, villages and rural areas. It is essential that provincial health departments and health regions combine resources to offer special subsidies to attract dentists to these areas. Subsidies may be of different kinds: basic salary, office accommodation, travelling clinic equipment, residence, transportation, or others.

The Commission recommends:

- 51. That subsidies chargeable to the Children's Dental Health Programme Grant be used to attract dentists to rural areas, and that in areas with populations too scattered to warrant resident dentists, arrangements be made for travelling dental clinics, and that special inducements be offered to attract dental specialists to medium sized centres.**

DENTAL SERVICES FOR WELFARE RECIPIENTS

A number of provinces have met the problem of dental need for welfare recipients by introducing a dental welfare services programme. The recipient is entitled to services (including, where necessary, the provision of dentures) from a hospital out-patient department or public health dental clinic or a dentist in private practice at either no cost or only part of the

¹ The Commission recognizes that presently known alternative means are both more expensive and less effective than fluoridating the community water supply.

normal fee. We believe that such programmes should be introduced by all provinces and that federal subsidy of 50 per cent, as with other forms of public assistance, should be granted, provided that the provinces take appropriate safeguards to assure the standards of service provided.

The Commission recommends:

- 52. That all provinces introduce programmes of adequate dental services for all recipients of public assistance and their dependants.**
- 53. That the Federal Government contribute one-half the cost of such programmes under the Health Services Programme.**

HOSPITAL DENTAL DEPARTMENTS

Experience in certain hospitals in Canada and in other countries makes evident the important advantages to certain patients if their dental requirements can be met in hospital. Among these are patients requiring multiple extractions under general anaesthesia, the treatment of severe infections of the mouth and jaws, the management of complicated fractures, as well as patients who are physically and mentally handicapped. There are important advances to be made through a team approach of an oral surgeon, orthodontist, and medical and/or dental specialists and paramedical personnel. The Commission is convinced that all major hospitals not having yet done so should now establish Departments of Dentistry.

The Commission recommends:

- 54. That all major general hospitals proceed as soon as possible to establish and equip a Department of Dentistry, providing both in-patient and out-patient services.**
- 55. That a Chief of the Dental Service be appointed in such hospitals.**
- 56. That qualified dentists be appointed to the hospital staff.**
- 57. That centres for treatment of cleft palate cases be established in children's hospitals and in general hospitals where adequate paediatric and associated services are available.¹**

5. Prescription Drug Services

In view of the high costs of many of the new life-saving, life-sustaining, pain-killing, and disease-preventing drugs, the Commission has concluded that prescribed drugs² should be introduced as a benefit of the Health Services

¹ See Canadian Dental Association, *op. cit.*, p. 59.

² Drugs prescribed by licensed medical practitioners.

Programme. Again, the decisions respecting the scope and priority of this benefit would be made by the provinces, but its authorization should be an early objective of the Canadian Parliament.

Few aspects of health services have generated so much public interest and concern as that now directed toward drugs and the drug manufacturing and distributing industries. In view of the official investigations undertaken and being launched, the Commission has not itself conducted a detailed examination of the industry. It has had available to it, however, a large number of important studies, and legislative hearings, as well as extensive submissions.¹ All of these underscore both the complexity of the problem and the necessity for solutions that enable essential drugs to be readily available and at reasonable cost. It is no accident that the public interest has increased in direct relationship to the efficacy of drug therapy and the high cost of many of the most effective drugs. Expenditures on all drugs are equivalent to 95 per cent of the outlay on physicians' services with prescribed drugs representing about 43 per cent of medical expenditures.²

Although we accept that the manufacture and distribution of drugs in this country is a private enterprise venture, we have no hesitation in stating that the public interest is dominant. When we speak of the availability of a large number of specific drugs, we are talking in terms of lives and the health of people.

Either the industry will itself make these drugs available at the lowest possible cost, or it will be necessary for agencies and devices of government to do so. We must not confuse the distribution of essential drugs with the distribution of cosmetics and sundries.

¹ Director of Investigation and Research Combines Investigation Act, Material Collected for Submission to the Restrictive Trade Practices Commission in the Course of an Inquiry under Section 42 of the Combines Investigation Act, Relating to *The Manufacture, Distribution and Sale of Drugs*, Ottawa: Department of Justice, 1961.

Restrictive Trade Practices Commission, *Report Concerning the Manufacture, Distribution and Sale of Drugs*, Ottawa: Queen's Printer, 1963.

Ontario Legislature, Select Committee to Inquire into Matters Pertaining to the Cost of Drugs, *Proceedings of Hearings of Select Committee on Drugs*, Toronto, June 1960.

Restrictive Trade Practices Commission, *Hearings in the Matter of An Inquiry under Section 42 of the Combines Investigation Act Relating to the Manufacture, Distribution and Sale of Drugs*, 1961.

The Manitoba Pharmaceutical Association and The Government of Manitoba, *Report of the Joint Committee on the Retail Structure of Drug Prices in Manitoba*, Winnipeg 1961.

Drug Industry Antitrust Act, Hearings before the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary United States Senate, Eighty-Seventh Congress, First Session, (S. Res. 52 on S. 1552), Washington; U.S. Government Printing Office, 1961.

House of Commons, Special Committee on Food and Drugs, *Proceedings No. 1; Minutes of Proceedings and Evidence, Nos. 2-4*, Dec. 1962-Feb. 1963, Ottawa: Queen's Printer, 1963.

The Canadian Pharmaceutical Association, Inc., the Canadian Pharmaceutical Manufacturers Association, The Government of Manitoba, the Government of the Province of Alberta, and others, briefs submitted to the Royal Commission on Health Services.

² Data relate to 1961, see Chapter 9.

Both the Federal and the Provincial Governments will undoubtedly have to make a multi-pronged approach in reducing costs of distribution, and some of these steps need not await the introduction of drugs as a benefit under the Health Services Programme.

In the administration of the programme it will be necessary for Health Services Commissions and the respective provincial pharmaceutical associations to agree upon a standard price and fee schedule for all prescriptions. Further, the Commission considers it highly desirable that a contributory payment should be made by the purchaser for each prescription, and suggests that the amount should be \$1.00 per prescription. If the retailer wishes to reduce the standard price of the prescription, with the purchaser's contribution being reduced by that amount, he should be free to do so.

Our recommendations with respect to drugs also include some suggestions that need not await the introduction of the drug benefit for their implementation and consequent effect.¹

The Commission recommends:

58. That the Federal Government contribute grants to the provinces (50 per cent of the cost of the programme) for the purpose of introducing a Prescription Drug Benefit within the Health Services Programme.
59. That in the provision of the drug benefit, there should be required a \$1.00 contributory payment by the purchaser for each prescription, subject to such discount as the retailer may offer. This charge should not be applied to drugs required for long-term therapy.
60. That the programme should cover such quantities of drugs for each prescription as are required by good medical practice taking into account the need for flexibility to assure an adequate but not wasteful supply. Further, prescribing practices should be reviewed periodically to ascertain whether and to what extent any over-prescribing of pharmaceuticals takes place, followed by appropriate changes in the regulations covering quantities of drugs paid for under the programme.
61. That the functions of the Drug Advisory Committee which is responsible for advising the Department of National Health and Welfare be expanded, and its membership enlarged to include representatives of the Canadian Medical Association, l'Association des médecins de langue française du Canada, the Canadian Pharmaceutical Association, the Canadian Hospital Association, the provincial Schools of Pharmacy, the provincial Colleges of Pharmacists, and the provincial Departments of Health.

¹ The evidence on which our recommendations are based is reviewed in Chapters 9, 16 and 17.

62. That the Food and Drug Directorate, with the assistance of the Advisory Committee, prepare and issue a National Drug Formulary which would be maintained on a current basis. This Formulary would include only those drugs which meet the specifications of the Directorate, and would be identified as such, and therefore eligible for inclusion in the Prescription Drug Benefit, one of the objects being to minimize the cost of prescribed drugs.¹ There should be established an appeals procedure for dealing with rejected applications, and an Information Service which would issue periodic bulletins providing the latest information on drugs and drug therapy to physicians, pharmacists, and hospitals.
63. That the budget of the Food and Drug Directorate of the Department of National Health and Welfare be increased to enable it to recruit and train the personnel necessary to fulfil the additional functions and responsibilities that it is essential for it to assume.
64. That in the application of the provisions of the Corporation Income Tax Act to manufacturers, importers, and distributors of drugs, consideration should be given to establishing a maximum of 15 per cent of total sales as the allowable deductible expense for advertising, sales promotion, "detail men", and other similar items.²
65. That the federal sales tax be removed from all drugs listed in the Formulary.
66. That Section 19 of the Patent Act extending the right of the Crown in the name of the Government of Canada to use patented inventions "paying to the patentee such sum as the Commissioner reports to be a reasonable compensation for the use thereof" be expanded to include provincial governments and their agencies.
67. That Section 41(3) of the Patent Act be amended to extend compulsory licensing to include the licensing of imports. The quality of such imported drugs should be assured by:
 - (a) requiring examination to ensure that they meet the specifications of the Food and Drug Directorate, and
 - (b) continuous checks of quantities imported.

¹ See Chapter 16.

² This recommendation differs from that of the Restrictive Trade Practices Commission for two reasons:

- (1) The drug industry is different from other industries in that its products are essential for health and, indeed, life.
- (2) The great bulk of production of drugs for Canadian consumption is produced by non-Canadian companies.

68. That the Federal Government consider delaying for five years a decision to implement the recommendation of the Restrictive Trade Practices Commission that patents on drugs be abolished, in order to ascertain whether the alternatives recommended above achieve the same results.
69. That provisions and administration of procedures with respect to granting of compulsory licences by the Commissioner of Patents be revised to remove unnecessary delays with respect to a decision to grant.¹ Provision should be made to establish a standard royalty payment comprising a fixed fee on application and a percentage of sales over the period of the licence to speed up proceedings and to encourage responsible applicants.²
70. That the Trade-marks Act should be amended (Section 20) to make clear that no infringement can be claimed where imported drugs are manufactured by a "related" company.
71. That the Canadian Tariff Board be requested to review tariffs on drugs with a view to establishing which tariff should be reduced or abolished covering imported drugs included in the National Formulary.
72. That in the administration of "anti-dumping" regulations in respect to drugs, the Minister of National Revenue be given discretion to establish "market value" at lower levels³ than that resulting from present practice to contribute to a reduction of drug prices.
73. That the Government of Canada, assisted by the Drug Advisory Committee, sponsor jointly with the drug industry and such provincial governments as wish to participate, a study of the feasibility of a voluntary drug price restraint programme for Canada, for implementation on a trial basis for a period of five years.
74. That provincial governments consider legislation enabling pharmacists in the dispensing of prescriptions to use a drug or drug combination

¹ This is an endorsement of a recommendation of the Royal Commission on Patents, Copyright and Industrial Designs, and of the Restrictive Trade Practices Commission.

² A recent order of the Federal Trade Commission in the United States removing unlawful restraints on trade in the formulation and sale of tetracycline provides for compulsory licensing of all domestic applicants under the patents in question whereby all applicants may be required to pay \$2,500 upon being issued a licence, which amount is to be applied against future royalties which are not to exceed 2½ per cent of licencees' net sales of tetracycline. Commerce Clearing House, Inc., *Trade Regulation Reporter*, Washington, D.C., 1964, p. 21,600.

³ The Restrictive Trade Practices Commission reported "... that, with respect to ethical drugs and more especially antibiotics and tranquillizers, the dumping duty rules may sometimes operate to increase the costs of some Canadian importers without giving any substantial protection to Canadian manufacturers." Restrictive Trade Practices Commission, *op. cit.*, p. 507.

that is the non-proprietary name equivalent of that named in the prescription unless the physician specifically indicates otherwise.¹

75. That educational programmes be conducted by the Food and Drug Directorate, the medical and pharmaceutical professions, and the provincial health service agencies to create greater understanding and co-operation between practitioners and pharmacists concerning the cost of drugs, and their prescription by proper names whenever possible.
76. That universities through their faculties of medicine and pharmacy strengthen their courses in pharmacology taken by medical students, by providing instruction in the economics of prescribing, including examination of comparative costs of drugs with similar therapeutic quality and efficacy; by short refresher courses dealing with pharmacology for physicians; and by extension work with medical practitioners in such fields as evaluation and therapeutics.
77. That the Federal Government centralize all its drug purchases in one agency.
78. That provinces be encouraged to adopt bulk-purchasing of drugs for all hospitals and public agencies, and that all tenders for drugs should be based, whenever possible, on specifications of the ingredients of the pharmaceutical.
79. That hospital pharmacies under the direction of a licensed pharmacist be permitted to provide narcotics and control drugs on prescription under the Food and Drug Act and the Narcotics Control Act.
80. That the Federal Government expand considerably research grants by the Health Sciences Research Council to universities and non-professional institutions to encourage the development of new drugs and/or improvement of existing drugs in Canada. In case of patentable discoveries these should be vested in the Crown.
81. That the Research and Statistics Division of the Department of National Health and Welfare undertake continuing cost-price analyses of drugs and periodically publish the results. Such studies would:
 - (a) assist in the compulsory licensing under the Patent Act of drugs to be manufactured in Canada,
 - (b) assist in the compulsory licensing of drugs to be imported into Canada,
 - (c) assist in the review of tariff items on drugs, undertaken by the Canadian Tariff Board,

¹ Similar to legislation presently in effect in Alberta, Chapter 16.

- (d) assist the Director of Investigation and Research under the Combines Act,
 - (e) assist public agencies at the federal and provincial level in calling for tenders for drugs,
 - (f) assist the Federal and Provincial Governments in formulating fiscal and procurement policies concerning drugs,
 - (g) assist drug manufacturers and drug distributors in examining their relative cost position and facilitate increasing competition where appropriate,
 - (h) assist the general public in acquiring an understanding of the various factors entering into drug costs and drug prices.
82. That the Research and Statistics Division of the Department of National Health and Welfare and the Dominion Bureau of Statistics co-operate in developing more comprehensive and up-to-date statistics relating to the supply costs of, and expenditures on, drugs covering both prescribed and non-prescribed pharmaceuticals.

6. Optical Services

The problem of visual deficiency is one of our most prevalent health defects. It is most serious among the aged, but failure to recognize and to correct visual deficiency early in children can adversely affect the course of their lives.

A decision to introduce an extensive public programme of eye care services at a specific point in time must take account of the stage of development of the technology (i.e., the body of scientific knowledge and the instruments) and of the resources and qualifications of professional personnel for diagnosis and treatment.

In the historical development of eye services the determination of the presence of refractive errors and their correction by the use of glasses can be said to represent a first stage. In fact, self-service in the provision of glasses still exists since they can be bought in retail stores even now and the itinerant peddler of glasses is within the memory of many.

The technique of refraction by a trained "refractionist" which permits a scientific measurement of refractive error and therefore the prescription of accurately correcting lenses represents a more advanced stage. And for the majority of people needing glasses this limited procedure may be satisfactory because the eye is healthy.

The third stage of technology is that of diagnosis of pathological conditions and other abnormalities that may or may not be related to

refractive error or which may, in fact, actually reveal pathological conditions elsewhere than in the eye to be treated by medical and surgical procedures.

It is in this third stage that the greatest advances have been recently made, both in diagnosis and in treatment, and it can be assumed that with continuing research and experimentation this body of knowledge and range of skills will become even greater. The essential point here is that the gap between the technology of stage two and of stage three will become increasingly larger in the future.

The significance of this widening gap is that each of these two last stages of technology is represented by a separate group of practitioners.

- (1) The ophthalmologists, who are medical specialists, qualified not only to diagnose disorders of vision by means of refraction and prescribe spectacles but, more important, qualified also to diagnose and treat medically and surgically diseases and other defects of the eye.

The medically qualified group in Canada totals approximately 600 and includes three categories:

- (a) ophthalmologists, who specialize in eye care, and whose training requires 10 to 11 years;
 - (b) a group of ophthalmologists who are also qualified as rhinotolaryngologists (ear, nose and throat specialists);
 - (c) a number of general practitioners who practice ophthalmology.
- (2) The optometrists, whose capabilities are in the main limited to those disorders of vision that can be determined by refraction and corrected by the prescribing of spectacles with their corrective lenses.

The optometrists, of whom there are approximately 1,500 in Canada, are trained in a four-year course following senior matriculation, and the nature of their training and skill is underscored by their own designation of themselves as "refractionists".

It is estimated by the professional societies of both groups that there is a shortage of personnel and, in fact, despite increased populations, there were in all but two provinces fewer optometrists in 1960 than in 1955.

- (3) The third group involved in eye services are the dispensing opticians who prepare the lenses and sell spectacles on prescription.

The Commission is convinced that optical services must have a high priority as a benefit in a comprehensive health programme, especially for children. But because of the conflicting representations made before it, the Commission has had to consider the respective roles of the ophthalmologists and the optometrists.

It should be noted that while all the medical sponsored prepayment plans now operating do provide for payment for medical and surgical services

performed by ophthalmologists, the policy with respect to payment for refractions performed by ophthalmologists varies from plan to plan. Two of the largest plans do pay; most of the others do not. None pay optometrists.

Under the recommended general medical services benefits, medical and surgical services provided by ophthalmologists would be automatically included.

It is obvious that there are not enough ophthalmologists to provide complete services including refractions for the entire population. Accordingly, a decision must be made with respect to the role, if any, of optometrists in the programme.

The fact that a patient visits an optometrist is *prima facie* evidence that he has some symptom or symptoms that he feels are related to his eyes. In the majority of cases, the eyes will be healthy although glasses to correct abnormal vision may be necessary.

With these cases there is no cause for concern. The question at issue arises out of our concern for those patients whose symptoms are the result of pathological conditions of the eye or other systemic disease and which may not be sufficiently evident to be detected even by the most experienced optometrist.

The optometrist is not medically qualified. He is not trained in pharmacology, and is prohibited by law from the use of drugs and cannot, therefore, use a cycloplegic (a drug that dilates the pupil) in order to make an eye examination complete enough to detect with certainty the presence of many pathological conditions. This requirement of the cycloplegic is even more essential in the examination of children than of adults. The present courses in the two schools of optometry in Canada now provide good training in optics and the technique of refraction. They also give some basic training in anatomy, physiology and pathology. The question before the Commission is whether this latter training is adequate.

Although we have been impressed by the emphasis placed in the optometrists' brief to the Commission stressing their responsibility for referral of those conditions which they detect as being beyond their ability to treat, we have also been impressed by the fact that the experience of ophthalmologists indicates a higher proportion of conditions requiring medical diagnosis and treatment than the average referred by optometrists.

The optometrists' report that on the average, 4.4 per cent of their patients are referred to ophthalmologists or other physicians, but available data indicate the incidence of eye diseases, or diseases as manifested in the eyes, is around 5 per cent of the total population. Obviously, those individuals seeking eye care from the optometrist are a self-selected group in which the incidence will be much higher than 5 per cent. The ophthalmologists' experi-

ence is that of those patients who come for refractions only, almost half had an associated eye disease and 13 per cent had a general disease affecting the eyes.¹

Whether the discrepancy is as large as sample surveys reveal, it is one which cannot be ignored. And more serious, as we have said, the continuing discoveries of new and improved methods of diagnosis will automatically result in an increasing proportion of serious conditions of or manifested in the eye being missed by optometrists that could be detected by ophthalmologists.

No doubt, in actual practice some optometrists do detect the presence of a pathological condition that a medical practitioner may overlook. Human experience being what it is, such cases are bound to occur. But the Commission is concerned that the very conditions most likely to be missed by an optometrist are among those having the most serious effects. Since the consequence of loss of sight is so serious we believe that every effort should be made to eliminate all elements of risk.

In seeking a solution to this dilemma, certain factors need to be considered:

- (1) The shortage of ophthalmologists and the long period of their training makes any proposal for restricting all prepaid eye care in the Health Services Programme to that profession wholly unrealistic. Optometrists must be used and their qualifications upgraded.
- (2) Since we believe that the schools of optometry do not provide adequate training in recognition of pathological eye conditions, there are two solutions:
 - (a) the need for provision in the present curriculum for increased training in anatomy, physiology, pathology, and in the use of

¹ Transcript, *op. cit.*, May 11, 1962, Vol. 51, p. 9710-11. Sydenstricker, E., and Britten, R. H., "The Physical Impairments of Adult Life". General results of a statistical study of medical examinations by the Life Extension Institute of 100,924 white male life insurance policy holders since 1921. *American Journal of Hygiene*, 1930, Vol. 11, 73-94. The Department of National Health and Welfare, and the Dominion Bureau of Statistics, *Illness and Health Care in Canada, Canadian Sickness Survey 1950-51*, Ottawa: Queen's Printer, 1960, Table 3, p. 100.

Blum, H. L., Peters, H. B., Bettman, J. W., "Vision Screening for Elementary Schools," *The Orinda Study*, Berkeley: University of California Press, 1959.

Levine, M. H., Smith, M. D., Kitching, J. S., *Study of Vision Testing Procedures; Delta Secondary School, 1951-52*, (Canada, Public Health Research Project 605-7-4), Hamilton, Ontario, Department of Health, Division of School Health Services, 1952 (unpublished study).

The Association of Optical Practitioners, *A statistical survey of 56,122 case records of employees in Royal Ordnance Factories examined by Ophthalmic Opticians, 1943-46*, London: The Association, 1947.

Baker, I., "A Statistical Study of Optometric Patients"; *Canadian Journal of Optometry*, December, 1961, Vol. 23, pp. 81-86. Kintner, G. F., "Optometry's Role in Health Maintenance—A Study of Referrals", *American Journal of Public Health*, November 1961, Vol. 51, pp. 1688-1693.

cycloplegics. This instruction should be provided by qualified instructors in the medical school faculties. This will solve the problem, however, only for those optometrists graduating after the implementation of our recommendation for upgrading, say, 1968.

- (b) the need for provision of courses in anatomy, physiology, pathology, and in the use of cycloplegics for optometrists now in practice through programmes of continuing education in the medical schools or in the Schools of Optometry provided by qualified instructors from medical school faculties. Co-operation from the medical profession to provide this instruction is essential and no refusal by the medical profession, or the medical school faculties, to assist in upgrading the optometrist can be tolerated. The objective should be a properly qualified optometrical profession practising their profession as such, and not relying on the sale of frames and other merchandise as their principal source of income.
- (3) There is a strong case, we believe, for optometrists to be employed, as they are now employed in the Canadian Forces Medical Service, under the general direction of ophthalmologists in "eye clinics" or group practice clinics. This arrangement of practice would remove our concern about the completeness of the diagnostic examination and seems to us to represent a most effective co-ordination of skills.
- (4) In the development of a programme benefit of optical services, one of the important considerations is the cost of the eye-glasses that will be required. It can be argued, and we believe convincingly, that the cost of the glasses is a relatively modest amount, that it is not a cost that recurs frequently, and is certainly one for which patients, except those receiving public assistance, can budget, either in advance or by instalment payments. On the other hand, so important is eyesight to the developing child that we do not believe that these arguments apply in the case of children. We believe that the optical services benefit for children should be complete. At some later date, consideration can be given to extending the provision of spectacles to all adults. In the meantime, provision of spectacles should be limited to children and recipients of public assistance.

The Commission recommends:

- 83. That the Health Services Programme provide optical services (but not spectacles) to all insured persons.**

84. That diagnostic services be provided, as now, by medically licensed practitioners.
85. That refractions be provided by ophthalmologists, other qualified physicians, and by optometrists who graduate in or after 1968, and by optometrists who by the year 1967 have taken the recommended additional training in anatomy, physiology, pathology, and in the use of cycloplegics.
86. That the schools of optometry be affiliated with the universities in the cities in which they are located, and the respective Medical School Departments should assume responsibility for the courses in anatomy, physiology, and pathology, and in the use of cycloplegics. Special courses should be provided in these subjects for optometrists now in practice, so that all who wish to do so may qualify to participate in the programme. The tuition fees, travelling and living expenses incurred by optometrists in taking such courses should be regarded as deductible expenses for income tax purposes.
87. That glasses of a standard quality of frame, lens, and price (although not necessarily of standard style) be provided to children (including young persons up to the age of 18) at no cost, but a part payment of one-third of the cost should be charged for a subsequent set required by reason of loss or damage.
88. That a charge of one-third of the cost also be made for any set provided to an adult recipient of public assistance.
89. That special inducements should be provided to attract more ophthalmologists to smaller population centres.
90. That specialized diagnostic clinics for serious eye disorders be established in all large population centres.
91. That in order to augment our scarce resources in the field of vision care, consideration be given by both ophthalmologists and optometrists to uniting their special skills and their efforts in various forms of group practice.
92. That the provincial health services agency make special arrangements for the bulk purchase, on tender, of spectacle frames and lenses.
93. That the Health Sciences Research Council give high priority to research grants in all aspects of ophthalmology.
94. That as part of a seven year crash programme special Professional Training Grants of \$5,000 per year be allocated to physicians undertaking post-graduate study in ophthalmology.

7. Hospital Services

(The Hospital Insurance and Diagnostic Services Act)

As we discuss in Chapter 10, the Hospital Insurance and Diagnostic Services Act of 1957 had its origin in the recommendations of the 1943-44 House of Commons Select Committee on Social Security, which included hospital services and diagnostic services as two of the benefits in a comprehensive health services programme.

The 1957 Act was passed as a result of a general consensus between most of the provinces and the Federal Government arrived at during the 1955 Federal-Provincial Conference and subsequent meetings of Provincial and Federal Ministers of Health and Finance. The records show that the greatest degree of agreement was reached on the necessity to introduce out-patient services either in advance of, or simultaneously with, the in-patient hospital services benefit.¹ We find, from our investigations and from the evidence presented to us, that the wisdom of that approach was, and is, incontrovertible.

The other major principles upon which provisions of the Hospital Insurance and Diagnostic Services Act were based are also considered in Chapter 10. These major provisions relate to universal coverage; terms and conditions on which benefits are to be available; definition of hospitals; quality of care; shareable costs; authorized charges; and the formula for federal sharing of costs.

On the basis of five years' experience, together with the representations made to us and the results of our own investigations, and in the light of needs for the comprehensive Health Services Programme we have recommended, each of the major provisions of the Act needs re-examination.

UNIVERSAL COVERAGE

We believe that the provisions for universal coverage as intended in the term "universally available" were sound, and that the flexibility provided in the negotiations of agreements with those provinces using the premium method of financing was most desirable. To have insisted upon compulsory coverage of the entire population from the first day of introduction of a provincial plan would have been administratively unrealistic. However, we now believe it essential that in those provinces not yet having one hundred per cent coverage of all residents, further steps should be taken to see that all are insured.

QUALITY OF CARE

We are aware that many agencies and many people are concerned with the quality of health care and are striving mightily to improve it; we are not convinced that all their efforts are yet adequate.

¹ St. Laurent, The Rt. Hon. L. S., at opening of Conference, Ottawa, 1957.

The major forces for upgrading are the medical profession itself, the nursing profession, and the Hospital Accreditation Council. The first exercises its efforts in a variety of ways including refresher courses in medical schools, lectures and classes at medical society meetings, but chiefly, we believe, through the medical staff organization in hospitals. The Hospital Accreditation Council exercises its role through inspections of hospitals. It is noteworthy, and highly to be commended, that the Hospital Accreditation Council is financed, in part, by contributions from the Canadian Medical Association, and l'Association des médecins de langue française du Canada from fees collected from its members.

A third type of agency concerned with quality is that typically referred to as the Hospitals Division in each of the provincial governments. Most provinces had such an agency before the programme was introduced, but all were required to have one under the terms of the agreements of the Hospital Insurance and Diagnostic Services Act. The agency may be part of the health department or a separate hospital insurance agency.

We find a number of gaps in these various approaches. A substantial volume of care in Canada is given by physicians who practise alone and have no hospital connection. Obviously, few of the organized efforts mentioned can reach them. A great many physicians practise in small hospitals where the number of physicians is so small that medical staff organization (and therefore organized general supervision of quality) is non-existent. In other places, private hospitals of varying size and of dubious quality also appear to be outside the scope of continuing inspection. Another weakness is that most, if not all, of the provincial hospitals divisions are under-staffed to provide the requisite degree of inspection and consultation. An equally serious shortcoming, in our view, is that the Hospital Accreditation Council is inadequately financed, and, therefore, under-staffed.

There is a further element in regard to the quality of care, **namely** hospital privileges. As we observed on page 29, physicians in Canada, both general practitioners and specialists, have historically had a close hospital connection. This does not mean, nor can it mean, that every licensed physician is automatically entitled to all hospital privileges he or she may ask for. The physician's right to hospital privileges is directly linked with the quality of care in the hospital. Many factors must be taken into consideration, including the number of beds available, the size of the medical staff needed, the training and experience of the physician—all directed to assuring the highest quality of patient care which must be the ultimate goal.

We should like to reiterate as a general principle that the quality of care in hospital is a matter of public interest. At its lowest point, it borders simply on protection of the patient against unsanitary conditions and malpractice and does not differ, therefore, from other protective measures

undertaken on behalf of the public such as restaurant inspection, meat-processing inspection and drug inspection.

At its highest, it is manifested in all the educational work undertaken by the professions in the upgrading of their performance.

We must state it as one of our fundamental beliefs that for the vast majority of members of the health professions, as for most hospitals, the greatest advances are to be made by the organized efforts that they themselves take through education, and self-regulation. It is for this reason that we strongly endorse the activities of the voluntary Hospital Accreditation Council. But, again, it must not be forgotten that all of these efforts are undertaken in the public interest and that, if by default, or because of inadequate support, the requirements are inadequately met, then public agencies must act on behalf of the public. The recommendations made elsewhere¹ with respect to assistance towards both basic and continuing education are consistent with this general statement. These, however, are not enough; they must be supplemented by effective safeguards of a high standard of hospital service.

Specific recommendations regarding hospital services will also be found under the following headings:

Mental Health, Alcoholism, and Drug Addiction

(Recommendations 14, 15 and 17)

Dental Services

(Recommendations 54-57)

Home Care Services

(Recommendations 120-121)

Nurse Education and Recruitment (Recommendation 129)

Medical Education and Recruitment (Recommendation 143)

The Commission recommends:

95. That grants to Hospital Accreditation Council be substantially increased; that the Council increase the number of surveyors and provide for more frequent inspections of hospitals of all sizes.
96. That provincial hospital insurance agencies, the Canadian Hospital Association, the Canadian Medical Association, and l'Association des médecins de langue française du Canada expand their efforts to encourage professional activities studies,² and that all hospitals having 25 beds or more and at least three physicians on the staff participate in this programme of professional self-assessment, the costs of the programme to be accepted as a shareable cost under the Hospital Insurance and Diagnostic Services Act.
97. That the provincial Colleges of Physicians and Surgeons have greater authority for the quality of care and the volume of surgery, especially

¹ See Recommendations 140-155 and 175.

² Similar to those of the Hospital Medical Records Institute in Toronto.

- of that performed in small hospitals without adequate equipment or sufficient qualified personnel.
98. That the Hospital Accreditation Council formulate in co-operation with the Canadian Hospital Association and the Catholic Hospital Association, rules and regulations relating to the granting of hospital privileges to physicians.
 99. That statistics on complications and surgical operations in hospital, and on length of stay in hospital by diagnoses be supplied by the hospital insurance agencies to joint committees of the Colleges of Physicians and Surgeons and the Hospital Associations in each province for analysis and review.
 100. That hospital insurance agencies provide adequate funds to hospitals to provide for care of patients by registered nurses on all shifts, and that all necessary nursing service authorized by the attending physician and approved by the chief of the relevant service be provided by the hospital as authorized in the Hospital Insurance and Diagnostic Services Act.
 101. That student nurses be not solely responsible for patient care especially on the night shift.
 102. That the staffs of the provincial hospitals agency be increased (this can be done through the National Health Grants) to make such arrangements as are necessary to ensure that adequate standards are maintained in hospitals, including the supervision, licensing and inspection thereof; with special attention to small hospitals (under 100 beds), all private hospitals, and all nursing homes.
 103. That all provincial hospital insurance agencies be aware that their decision with respect to staffing and equipping hospitals must constantly take into account the rapidly developing knowledge and technology in health care. It is highly desirable that they avail themselves of qualified experts in assessing requests by hospitals for additional personnel and new equipment.
 104. That the Health Planning Councils¹ make every effort to ensure that hospitals avoid unnecessary duplication of specialized equipment and personnel in their joint efforts to meet community needs.

OUT-PATIENT SERVICES

As indicated above, it was the consensus of provincial and federal representatives at the 1955 Conference that, regardless of the decision with respect to the hospital insurance benefit, hospital out-patient services should

¹ See Recommendation 1(10).

receive the highest priority. The evidence presented to this Commission indicates that in those provinces that have not introduced a complete out-patient benefit, the volume of care unnecessarily provided to in-patients that could equally well be provided to them at a lower cost as out-patients, is large indeed.¹ This represents the needless expenditure of millions of dollars of federal and provincial tax funds. There is no justification for this waste of scarce tax dollars. The eastern provinces have shown that the administration of the benefit presents no serious obstacle. We are recommending a federal contribution to the financing of the construction of new, and the extension of existing out-patient facilities.²

The Commission recommends:

- 105. That the Act be amended to require the out-patient services benefit as a condition of any further payment in respect of in-patient benefits, and that the Minister thereupon give notice to those provinces not providing the full range of out-patient services that the Agreements are to be renegotiated. In the meantime, citizens concerned with hospital insurance costs might impress upon their governments the need for immediate action.**
- 106. That in providing the out-patient service, the diagnostic facilities in recognized clinics and in specialists' offices with facilities related to their specialty, their place of work be designated as a "facility" under the meaning of the Act, to provide such of the out-patient services as they are qualified to do, under the terms and conditions of the Act, prior to the introduction of a Medical Services Programme.**
- 107. That the limitations on availability of out-patient services as an insured service to periods of 24 or 48 hours following an accident be eliminated.**

MENTAL HOSPITAL CARE

Under the present conditions of the Act, payment for care of mentally ill patients is excluded if it is provided in mental hospitals, but is included if it is provided in general hospitals. We believe that this policy of excluding the bulk of treatment for mental illness is not in the public interest. The whole issue is of such magnitude and importance that it is treated as a separate section of this Report.³

¹ One hospital estimates that "outpatient services and adequate facilities for chronic care would relieve our hospital of . . . 11.1% of our bed total". (The Regina Grey Nuns' Hospital, brief submitted to the Royal Commission on Health Services, Regina, 1962, p. 7). Nova Scotia with one of the most extensive out-patient service as insured service finds this service relieves "very substantially the pressure on much needed hospital beds". (Annual Report of the Nova Scotia Hospital Insurance Commission for the year ended March 31, 1962, Halifax: Queen's Printer, 1962, p. 9).

² See Recommendation 176.

³ See Chapters 8 and 14.

HOME CARE PROGRAMME

The fact that home care services, even if provided by a hospital-based plan and under the auspices of the hospital, are not covered by the Act, severely hampers the development of such plans. In dealing with home care programmes, we therefore recommend¹ that care provided by hospital-based home care programmes be brought under the provisions of the Act.

SPECIALIZED FUNCTIONS OF TEACHING HOSPITALS

Teaching hospitals do have certain special costs which justifiably can be interpreted as "shareable costs" under the Act because they relate to hospital services as well as to the teaching function. This applies also to part of the salary of faculty staff. We therefore recommend² the coverage of such costs under the Act.

TUBERCULOSIS SANATORIA

The question of payment for the care of tuberculosis patients, also excluded from the Act, is, fortunately, not as serious as that of care for mentally-ill patients. Nevertheless the Commission also finds no rationale for this exclusion.

The Commission recommends:

- 108. That the exclusion of tuberculosis hospitals and sanatoria be removed from the Act and that wards of such hospitals providing treatment be designated as a "hospital" or "facility" under the terms of the Act.**

SHAREABLE COSTS

Interest and Depreciation

The national hospital insurance programme accomplished much, but like all projects of human progress, it has revealed new problems to be solved. In effect, our society has said that no Canadian should be barred, for economic reasons, from needed hospital care.

What the Canadian people have not quite resolved, however, is the question how, in a democracy governed by three levels of government, the hospital facilities required to provide that care should be financed.

The Federal Government provides through the Hospital Construction Grant approximately 15 per cent of the cost of hospital facilities and, through the hospital plan, half the cost of equipment. This has left

¹ See Recommendations 120 and 121.

² See Recommendation 143.

to the provinces, local authorities, and voluntary groups, the responsibility for the major share of the problem of financing construction. And, again, although the general principle may be sound, it is the unequal ability among the provinces to assume the provincial share that creates the main problem. This unequal capacity is reflected in the variety of provisions the provinces have adopted, as shown below:

FEDERAL AND PROVINCIAL CONTRIBUTIONS TO ACTIVE TREATMENT
HOSPITAL CONSTRUCTION FINANCING, DEC. 31, 1963

Province	Federal Grant	Provincial Grant	Other
	\$	\$	
British Columbia.....	2,000	2,000	Plus 50 per cent of balance of approved cost
Alberta.....	2,000	2,000	Pays balance of cost by meeting debenture and interest payments as due
Saskatchewan.....	2,000		70 per cent of balance in Base Hospitals 60 per cent of balance in Regional Hospitals 40 per cent of balance in Community Hospitals
Manitoba.....	2,000	2,000	Plus 80 per cent of balance by meeting debenture and interest payments as due
Ontario.....	2,000	3,200	
Quebec.....	2,000	2,000	Plus discretionary grants
New Brunswick.....	2,000	2,000	
Nova Scotia.....	2,000	2,000	Plus \$1,000
Prince Edward Island.....	2,000	2,000	Plus capital and interest to maximum half of balance
Newfoundland.....	2,000	2,000	Plus unspecified assistance.

The Commission recommends:

- 109. That depreciation allowances on the value of buildings and fixed equipment, less the amount paid by federal and provincial grants, be recognized as a shareable cost.**

Authorized Charges

“Authorized charges” is the term applied in the Act to what are known as “co-insurance” or “deterrent fees” or “utilization fees”. The provisions of the Act penalize any province that adopts such charges by refusing to match the revenues from authorized charges as it does revenues channelled directly

from provincial funds. The Commission is concerned, as it has said elsewhere, with the mounting cost of the hospital plan and believes, therefore, that the efforts of a province to introduce a greater degree of prudence in the use of these services, which are both reasonable and compatible with the spirit of the Act, should not be penalized.

The Commission recommends:

- 110. That Section 4(a) (ii) of the Act be amended to remove the penalty now imposed upon a province that requires a reasonable per diem patient payment.**

Authorized Charges for Hospitalized Welfare Recipients

In British Columbia and Alberta, the authorized charges (patient payment) for hospitalized welfare recipients are paid by the respective welfare departments. For these patients, therefore, the situation is precisely the same as it is for all insured patients in the other provinces where there are no co-insurance charges. Nevertheless, the Federal Government does not share in that part of the cost represented by the co-insurance payment which is borne in full by the provincial governments. This seems to us an injustice based on a too legalistic interpretation of the Act.

The Commission recommends:

- 111. That this discrimination be removed with respect to hospitalized welfare patients.**

Net Income from Gift Shops, and Other Ancillary Operations

The Commission believes that the regulations concerning earnings from these types of ancillary operations are too narrowly restrictive, and should be broadened to leave to hospitals the full net proceeds from such activities.

The Commission recommends:

- 112. That the regulations concerning earnings from gift shops and other ancillary operations should be made less restrictive.**

8. Prosthetic Services and Appliances

In Chapter 5 we discuss the various health hazards and their social impact. In particular we stress the fact that prolonged illness and impairment have an effect quite different from that of a corresponding number of shorter illnesses. This applies especially to the permanent disabilities and

impairments. A number of short illnesses, even if accompanied by inability to carry on one's usual activity, need not interfere seriously with one's pursuit in life, be it going to school, working, or any other activity. Many employees are, in fact, assured not only of retaining their job but also their income during illness of a specified duration each year by the provision of paid sick leave or sickness benefit insurance.

Long-term illness and disability, however, do create serious social and economic problems for the patient and his dependents or other members of the household. It is chronic illness which more and more saps the strength of our population in a twofold way: first by reducing the well-being and social function of the stricken individual, and next by the demand he creates for services and assistance from his family and the community.

For this reason we were particularly impressed by the evidence before us regarding the progress of rehabilitation services.¹ The many forms of rehabilitation services have in common that the care of the patient does not stop with the halting or slowing-down of the disease process but continues in an all-out attempt to restore the patient as nearly as possible to his normal social role. Any degree of independence thus gained or regained not only contributes to the individual's happiness and economic security but also relieves, correspondingly, the community of a potential burden.

For those whose disability results from the absence, loss, impairment or deformity of limbs or organs, rehabilitation cannot be achieved without adequate prosthetic devices, appliances or aids, which therefore form an integral part of health care. The lifetime cost of such devices, appliances, or aids may range up to several thousand dollars in the case of children whose prostheses have to be renewed periodically as they grow.

The problem is greatest among the babies and children with congenital deformities. The thalidomide story has focussed public attention on the plight of these children and their parents. While the deformities resulting from this drug are particularly severe, similar cases of congenital deformities have occurred before and will continue to occur. These infants are as deserving as the victims of thalidomide. Observing these very young children, we have been deeply moved by their distressing situation and the strain they place on their parents, but also we have been struck with the amazing benefits these children can derive from the ingenuity of modern prosthetic techniques.

These children will depend on their prosthesis for a whole lifetime. The aid of an artificial limb or other device or aid can also make the difference to an older person between many years of complete dependency on others on the one hand and self-reliance on the other hand. In all cases it is

¹ See Chapter 15.

important that the device be so designed as to equip the patient to function as normally as possible.

The cost of these and other devices, appliances or aids should, therefore, not be left to the individual, or his parents, nor should the handicapped person have to rely on charity or the generosity of service clubs for this essential service as is now the case. It is the magnificent work of the voluntary agencies¹ that has brought to public attention the seriousness and magnitude of this problem and the consequent need for government action. This benefit forms part of the Medical Services outlined in Recommendation No. 30.

The Commission recommends:

113. That prosthetic devices, appliances, or aids be supplied as a medical services benefit under the plan, as prescribed by a committee consisting of the patient's physician and a prosthetist, and where possible also of an occupational therapist or physio-therapist.
114. That such prosthetic devices or appliances be repaired or renewed as a benefit under the plan, on the recommendation of a committee as described above.
115. That funds be made available through the Health Sciences Research Council for research and experimentation into the creation and distribution of prosthetic devices, the development of effective techniques; and by Professional Training Grants for the training of the necessary technical personnel.

9. Home Care Services

During our investigations into facilities and services for patient care we have been struck by the general lack of development of one of the most promising types of services for providing quality care at relatively low cost.² This is the programme of organized home care, in which experiments have repeatedly demonstrated that some patients are better satisfied, and costs are lower. Home care programmes have been conducted over a period of at least fifteen years in Canada, the United States, and Europe, and can now be said to have successfully passed beyond the experimental stage.³

¹ Such as the sponsorship by Rotary Clubs across Canada of the Crippled Children's Easter Seal Fund.

² See Chapter 15.

³ Visiting nursing, an essential component of home care, has existed in Canada on an organized basis since the inauguration of the Victorian Order of Nurses for Canada in 1897. It is now provided by this Order, the Saint Elizabeth Visiting Nurses Association, and the Société des Infirmières Visiteuses.

The hospital-sponsored Blue Cross Plan of New York has this to say about home care programmes:

"They have demonstrated that care in the home can be excellent care for the well-selected patient. Use of Home Care also increases the availability of hospital beds for patients who require in-hospital care. At the same time, the costs of care are reduced because maintenance of the patient in his own home is less expensive than in-hospital care".¹

We believe that in the interests of patients and of costs, full-scale programmes of home care should now be launched in every urban centre of, say, 10,000 population and over, and in smaller centres as resources can be mobilized.

These programmes should be either hospital- or community-based, the first probably oriented to earlier discharge of hospitalized patients and the second primarily to patients not requiring admission to hospital. The first can readily be financed under the present terms of the Hospital Insurance and Diagnostic Services Act, and both federal and provincial authorities should take the lead in assisting hospitals to establish and finance such programmes. In fact a full-scale hospital based home care programme should be required before any request for hospital bed expansion is considered by the provincial hospital planning authority for communities of 10,000 population or more.

Although the most important reason for making use of home care is the patients' interest, we cannot afford not to take advantage of the lower cost that home care makes possible.

We recognize that there are problems in getting home care programmes under way, and that, to be fully successful, they require the full co-operation of medical staff, hospital administration, and voluntary agencies.

One of the chief results of home care programmes is the convenience to the physician who finds readily available to him an organization that puts at his disposal and that of his patients an array of services not hitherto utilized by him or of which he may have been unaware.

The Commission recommends:

- 116. That every hospital in Canada of 100 beds or more introduce either independently, or in association with other hospitals in the same centre, other community organizations, the local health department, or any combination of these, a home care programme.**

¹ Associated Hospital Service of New York, *Report of a Study Concerning the Feasibility of Providing Visiting Nurse Service Following Hospitalization for Blue Cross Subscribers*, The Service, New York 1957, p. 8.

117. That local medical societies establish a liaison committee to expedite the development and use of home care services.
118. That hospital medical review committees stress the early discharge of patients who can be suitably cared for at home with the services of such a programme.
119. That pamphlets describing the programme and its services be prepared and distributed to patients considered possible candidates for early discharge under the programme.
120. That the Hospital Insurance and Diagnostic Services Act regulations be interpreted to cover costs of patient care provided by hospital-based home care programmes.
121. That the Hospital Insurance and Diagnostic Services Act regulations be interpreted to include as shareable costs payments made to community-based home care programmes for care provided to hospital patients returned to their homes but retained on the hospital register.
122. That the Public Health Grant be used to assist in financing community-based home care programmes.
123. That public health departments and voluntary agencies be encouraged by such grant assistance to undertake home care programmes either as community-based programmes or in co-operation with hospitals.

II. HEALTH PERSONNEL, FACILITIES AND RESEARCH

10. Nurse Education and Recruitment

The representations made before the Commission, and the studies prepared for it, together with the voluminous literature now available on the subject of nursing, all point to the pressing need for a clearer delineation of nursing responsibilities and, simultaneously, a restructuring of nursing education.¹

A number of factors underscore the need for reform.

- (1) There is a serious shortage of qualified instructors to staff the hospital schools and university schools of nursing. Our studies show that 75 per cent of the instructors in the hospital schools and 56 per cent in the university schools do not have even minimum² quali-

¹ See Chapter 13 for a discussion of the various types of nurses.

² A B.Sc. degree for instructors in hospital schools of nursing, and at least a Master's degree in university schools.

fications. The graduates of a school can be no better than the quality of their educational experience.

- (2) In the light of our knowledge of and established practice in the education of all other professions, the apprenticeship-type system by which the majority of nurses are now solely trained clearly requires re-examination.
- (3) Our study of nursing utilization reveals that many nurses are performing duties for which they are over-qualified, duties for which they are not qualified, and duties that should be assigned to other occupations. The apprenticeship system of education helps to perpetuate this lack of a clear division of responsibility.
- (4) The period of training is unnecessarily long. A three-year programme, in which two-thirds of all formal instruction is given in the first year, is obviously oriented to some purpose other than education. The recent reorganization of some courses, in which the trainee is classified for two years as a student and for the third year as an "intern" on part salary, is tacit recognition of the large element of "service" by which the nursing student pays for her education.¹

On the basis of present knowledge and experience, two categories of nurses are required, both to be prepared through the post-high school educational system:

- (1) The graduate of a four- or five-year integrated basic university programme or of a shorter programme for university graduates. It is estimated that about 25 per cent of positions for nurses require this type and range of preparation. These are the instructors, supervisors, administrators and nurses in other leading positions.
- (2) The graduate of a new type of two-year diploma programme who would function as a clinical or bedside nurse.

Each of these two categories of nurses requires a specially designed programme of instruction, but nurses in each category should remain Registered Nurses.

In addition to these two categories of nurses, nursing assistants will still be required in order to promote the more effective use of nurses. These aides may be recruited from among those who do not have the academic standing required to enter schools of nursing.

With the recommendations we have made respecting the need to integrate the psychiatric and general health services (particularly the care of psychiatric patients in general hospitals), we believe that the need for the

¹ See Chapter 13.

separate programme for psychiatric nurses in the four western provinces will disappear. Special programmes should be set up and financial assistance provided to enable qualified psychiatric nurses (R.P.N.) to qualify for and obtain the Registered Nurse (R.N.) licence.

THE HOSPITAL SCHOOL OF NURSING

Much of the evidence presented to the Commission indicates major changes are under way in nursing education in the hospital schools and, in general, the Commission believes that these changes are highly appropriate and should be accelerated. As in most professions, the preparation of nurses began as a system of apprenticeship. As the scientific knowledge component in nursing practice increased, it became necessary to expand the time spent in classroom instruction.

In order to meet the service needs of the hospital as well as the training needs of the students, the students have typically spent more time in caring for patients than was necessary for their training. In return for this service, the hospital has provided living accommodation and free tuition. In recent years, however, new approaches have concentrated the instruction and clinical experience in two years, and thereby reduced the "service" component. In these schools, the education and training of nurses is following the pattern of other professions that are reducing or eliminating the apprenticeship aspects of their preparation.

The Commission believes this to be the right approach. The educational system for nursing should be organized and financed like other forms of professional education. An additional reason for the change in nursing education is not only that we shall obtain equally, if not better, qualified personnel in shorter time, but that a substantial part of hospitalized patient-care will no longer depend, as it does now, upon apprentices.

We recognize that there is divergent opinion on this subject of control of nursing education. We are aware, as our studies indicate, that most nursing service directors make heroic efforts to assure that the time spent by students "on the wards" is limited to that necessary for adequate clinical experience. That most of them fail in this objective is due to the system, and to the pressures upon the nursing service (of which the students are considered to be part) to give priority to the immediate needs of patients rather than to the educational needs of students. The staffing policies pursued by several of the provincial hospital insurance authorities make the use of students as part of the nursing service inescapable, and we consider this restriction on the employment of qualified nurses as undesirable, and, indeed, dangerous. This represents an unwarranted restriction on effective management of hospitals.

It will be necessary to separate as completely as possible the functions of nursing education from the hospital nursing service, and place control of the education programme completely under the Director of the School of Nursing.

It will take time to accomplish this major and long overdue reform in nursing education, and there will be many difficulties to overcome. But it is a reform that we believe to be both desirable and inevitable, and the longer it is delayed, the greater will the obstacles become. We recognize that the changes must be introduced in stages so as not to disrupt the nursing services unduly, and, further, that some hospital schools will be able to make a more complete change than others. But we are convinced that the time to start is now.

The steps that will need to be taken to accomplish this objective are as follows:

- (1) The establishment in each province of a Nursing Education Planning Committee, advisory to the Minister of Health with representatives from the Provincial Nurses' Association, the Hospital Associations, the Hospital Insurance authority, the University(ies) and the Provincial Department of Education to select annually the number of schools in which the programme will be initiated, and thereby assure its gradual and orderly development.
- (2) The separation of the budget of the school of nursing from that of the hospital to make sure that the nursing school budget be used for educational purposes only. The separation of educational and nursing service functions can obviously be reached in stages and in a variety of ways. In some hospitals the Director of the School of Nursing may be responsible to the Board through a Nursing Education Advisory Committee of the Board; in others, this objective may be reached satisfactorily by having her directly responsible to the Board.
- (3) An arrangement between the school administration and the hospital administration for the use of the hospital's educational and clinical facilities that approximates the arrangement that now exists in many hospitals for students in medical schools and university schools of nursing.
- (4) The establishment of a *new* educational curriculum in nursing leading to a diploma in *two years*.¹
- (5) An annual reduction in the percentage of time the student spends in nursing service which will require the recruitment by the hospitals

¹ See Chapter 13 for a discussion of the urgency and feasibility of this programme.

of additional qualified nurses and nursing aides to perform the services now provided by the students, and authorization by the hospital insurance agencies for the establishment of these positions. Concurrently an equivalent reduction must be made in the numbers of student nurses counted in the complement of nursing service personnel authorized by the hospital insurance agencies.

- (6) Experimentation with other agencies to conduct an educational programme for nurses. These could be such post-high school institutions as Junior Colleges or Institutes of Technology. Although, in our view, the Hospital School of Nursing will remain the major training institution for this profession, there is no inherent reason for the hospital to be the only agency to be conducting a school for nurses at this level, although all schools will need to use hospitals for clinical experience.¹
- (7) Financial assistance should be provided to students who cannot pay their own fees and/or maintenance. It is recognized that by changing the present system under which the student pays for her own education by her contribution of service to the hospital, a substantial number of those coming from families with moderate incomes will need assistance to enrol. Accordingly, bursaries must be available to enable these candidates to continue to select nursing as a career. Federal and provincial funds must continue to be made available to meet the operating costs of the schools. The principle for both these forms of assistance is now embodied in the Hospital Insurance and Diagnostic Services Act, under which other health workers (e.g., radiological and laboratory technicians) are subsidized while taking their training.
- (8) With all of the foregoing accomplished, there will remain one factor on which the success of the new programme will depend: an all-out effort to prepare more highly qualified instructors. This shortage is the most serious obstacle to any improvement in nursing education and, therefore, of any improvement in nursing service. For the preparation of these instructors we must look to the University Schools of Nursing.

THE UNIVERSITY SCHOOL OF NURSING

Six of the fourteen University Schools of Nursing offer a basic four- or five-year integrated programme and control all of the student's experience during this period as do other university professional schools. The clinical

¹ Such as the Quo Vadis Project initiated by the Catholic Hospital Conference in Ontario in 1962, to encourage women between the ages of 30 and 50 to take up nursing as a career.

experience is obtained in hospitals affiliated with the school but under the supervision of university clinical instructors. The other eight schools grant a baccalaureate degree for a combination of two years of work in the university and three years of work in a hospital school of nursing, where the student is under the control of the hospital school and subject to the same service requirements as the non-university students. We believe the integrated programme is the only educationally sound one and should be adopted by the remaining University Schools of Nursing.

It is of the utmost importance that these schools be rapidly expanded in number to enable them to prepare approximately one-fourth of the total recruits to the nursing force. It is from this pool that the instructors, supervisors, administrators and other leaders in the profession must come.

The Commission recommends:

- 124. That there be established in each province a Nursing Education Planning Committee, advisory to the Minister of Health, to plan and direct the gradual and orderly development of nursing education. The Committee should be representative of the Provincial Nurses Association, the Hospital Associations, University(ies), the Hospital Insurance agency, and the Department of Education.**
- 125. That the budgets of the Schools of Nursing operated by hospitals be separated from that of the Nursing Service of the hospital to the end that the Schools of Nursing become wholly educational in their function.**
- 126. That hospitals make their educational and clinical facilities available for the instruction and clinical experience of students, without claim on the student for service.**
- 127. That these Schools of Nursing reorganize their curricula to provide for graduation with a diploma in two years, and that, where necessary, provincial legislation be amended to provide for licensing of the graduate as a registered nurse on the successful completion of examinations following the two-year course.**
- 128. That to encourage suitable personnel to enter and remain in the nursing profession, salaries commensurate with the training and responsibilities of nurses and comparable with those in similar fields be paid by federal and provincial agencies and by hospitals.**
- 129. That financial assistance be provided to student nurses in hospital schools in the same amounts and under the same conditions as those for students in other fields in the hospital.**

130. That consideration be given to supporting only those schools of a sufficiently large size that will permit the most effective utilization of qualified teaching personnel and financial resources.
131. That all University Schools of Nursing develop an integrated degree programme and direct all phases of this programme. At least one University School in each of Canada's four main regions should also develop a Master's degree programme in nursing, one of which should be a French language school.
132. That the existing University Schools of Nursing be expanded to their optimum capacity and that federal capital grants from the Health Facilities Development Fund and federal operating grants from the Health Professions Education Grant be available to them.
133. That there be established as quickly as qualified personnel can be recruited at least ten more university schools to expand the annual output of university graduate nurses, and that funds be allocated from the Health Facilities Development Fund to provide one-half the cost of establishing these schools. We believe these ten schools can be established in about five years. Among the universities where these might be provided as additional faculties are: University of Victoria, University of Alberta (Calgary), University of Saskatchewan (Regina), Laurentian University, York University, Carleton University, Université Laval, Université de Sherbrooke, Université de Moncton, Memorial University. Given time for them to become fully established, (say, 1971) the 24 schools then operating could, with an average enrolment of 225,¹ produce approximately 1,200 graduates annually.
134. That as part of a seven year crash programme, Professional Training Grant bursaries of \$3,500 be made available so that more graduate nurses having the baccalaureate degree be enabled to obtain the Master's degree in nursing to qualify them for appointment as university instructors.
135. That as part of the same seven-year crash programme, Professional Training Grant bursaries to the amount of \$2,000 be made available immediately to Registered Nurses wishing to enrol for a Bachelor's degree in nursing in university schools of nursing.
136. That the present Professional Training Grant bursaries be expanded in number to enable more diploma nurses to obtain certification in public health nursing.

¹ This allows for an attrition rate of approximately 20 per cent during the four-year period.

137. That when the diploma course is shortened to two years, the training period of the nursing assistant be shortened correspondingly. Meanwhile, a study should be made of the feasibility of training the nursing assistants on the job.
138. That in view of the need for male nurses in the health field, more efforts be made to attract men to the nursing profession.
139. That in order to provide a continuous uninterrupted supply of qualified operating room technicians, a new classification of this type of work be established with adequate salaries so that men may make a career of this occupation.

11. Medical Education and Recruitment

The Commission's chief concern with medical education is the capacity of the medical schools in Canada to graduate a sufficient supply of well-qualified physicians to meet the expanding demands resulting from an increasing population and a doubling of the number of persons who will have their health services prepaid through extension of prepayment to the entire population, as well as to meet Canada's increasing international obligations to train professional health personnel for the developing nations.

We are also concerned, of course, with the resources of buildings for teaching and research and with the personnel qualified as professors and research workers in the medical school faculties. The financing of these resources for medical education, both now and in the future, looms as a matter of major proportions.

In considering this question of education of physicians two important points must be borne in mind:

- (1) Education of physicians, like that of dentists, is a matter of national concern. As our manpower studies reveal, physicians are highly mobile and a large proportion of physicians in every province have been trained in some other province. A few schools trained physicians for the entire nation for many years. There is a strong case, therefore, for national financial assistance to provinces carrying this responsibility.
- (2) Migration also plays a major role. The average annual immigration of doctors to Canada over the past five years has been equal to the combined graduating classes of our three largest medical schools. At the same time, our losses through emigration have been equal to the graduating classes of two of these schools. Any marked change in either of these inward and outward movements would obviously have

profound effects on our supply. As we have indicated elsewhere,¹ it is our belief that the situation will become more serious. We expect European immigration to decline and, with the increasing shortage of physicians in the United States, the danger exists of an increasing southward drain on our resources.²

Because of the length of time (a minimum of seven years) required for the educational preparation of a physician, there can be no substantial increase in our graduating classes before 1970, since the students graduating up to that year are already in university. To meet our needs in the nineteen seventies, it will be necessary both to expand several of our existing schools to their optimum size and to establish at least five new schools to come into operation during the late nineteen sixties and early nineteen seventies. Planning for one new school, Sherbrooke, is already under way and it is scheduled for opening in 1967. A second one, McMaster, is now under discussion and it should open in 1968.³ Planning should begin for others as follows: Toronto area, 1969; Calgary, 1971; Victoria, 1973. In the mid nineteen seventies, a French language medical school should be established at Moncton. Some of these may begin earlier as two-year pre-clinical courses, and this could also be true, later, at other universities. Failure to meet these dates as scheduled will result in serious deficiencies commencing in the mid nineteen seventies.

A study should be made by the Health Sciences Research Council of the feasibility of organizing one additional medical school probably at Memorial University in St. John's to graduate physicians specially trained in the exigencies of frontier medicine. Such a medical school could help to fulfil Canada's obligation to the emerging nations now short of professional personnel specifically qualified to meet local needs.⁴

Fundamental to the functioning of our medical schools is an adequate supply of qualified faculty members. We are losing an increasing number of these to the United States annually and, unless their remuneration is increased, we will lose more.

In examining the financial problems of medical education, the Commission has had impressed upon it the serious consequences for the medical schools of the lack of specific reference to the teaching hospitals associated with medical schools in the Hospital Insurance and Diagnostic Services Act. These hospitals do have special costs that are related to the teaching function but which are, in our opinion, quite properly definable as hospital "shareable

¹ See Chapter 7.

² In fact, a United States estimate of future supply of physicians in that country assumes an increasing rate of emigration from Canada to the United States. See Chapter 7.

³ See the *Report and Recommendations Regarding a Medical School at McMaster University*, Hamilton, The University, September 1963.

⁴ This idea is similar to the concept underlying the programme organized by St. Francis Xavier University at Antigonish, N.S., in the field of co-operatives to which students now come from many parts of the world.

costs" under this Act. These include a considerable portion of the salaries of full-time faculty, and the appropriate fees of part-time faculty, all of whom devote a large proportion of their time to purely hospital functions, as well as to a large proportion of operational research that is also a hospital requirement. We believe that the Department of National Health and Welfare should take the lead in assuring that these costs are met, and if any obstacles, legal or otherwise, are found, the Act and/or regulations should be amended to make certain that they are recognized and paid as shareable costs.

The Commission recommends:

140. That funds be allocated from the Health Facilities Development Fund to provide for one-half the cost of the required¹ expansion and/or renovation of medical schools now operating.
141. That funds be allocated from the Health Facilities Development Fund to provide one-half the cost of construction of new medical schools, including where necessary the basic sciences facilities at the Université de Sherbrooke (for 1967), McMaster University (for 1968), a university in the Toronto area (for 1969),² University of Alberta, Calgary (for 1971), University of Victoria (for 1973), Université de Moncton (for the mid 1970's), and at Memorial University if the study we suggest above supports the idea.
142. That the provisions of the Hospital Construction Grant be amended to provide one-half the cost of hospital facilities for new university hospitals or for expansion or renovation of existing university-affiliated teaching hospitals, or teaching units in non-university hospitals, the grants to cover all departments (e.g., Clinical Investigation Units) to a maximum of ten beds per student in the projected graduating class.
143. That the Department of National Health and Welfare and the provincial hospital insurance authorities immediately recognize expenditures on certain specialized functions of teaching hospitals as shareable costs under the Hospital Insurance and Diagnostic Services Act, including that portion of the salaries or fees of full-time and part-time medical school personnel that relates to what are essentially hospital functions, as well as expenditures on operational research related to quality control of care and departmental administration.
144. That to attract more medical personnel, the Professional Training Grant be increased to provide for an annual grant, on application, of

¹See Chapter 13.

²In our view, this can be based on Sunnybrook Hospital with proper safeguards for the entitlement of veterans.

\$2,000 to each Canadian medical student with satisfactory performance in his third and fourth medical years at a Canadian school of medicine.

145. That in respect of foreign medical students enrolled in Canadian medical schools at the request of federal departments, a grant be made to the university over and above the regular fees, calculated to represent the amount of university subsidy of the student. (The amount should be negotiated between federal officials and the Canadian Universities Foundation).
146. That the remuneration of part-time clinical teachers be increased to realistic levels.
147. That the salaries paid to interns and residents in teaching hospitals approved for internship and resident training be increased to more reasonable levels.
148. That the Health Sciences Research Council be encouraged to increase the number of research associateships at medical schools and, in addition, make provisions for scholarships to recent medical graduates not yet qualified for research associateships.
149. That to train sufficient personnel required for faculties in basic and pre-clinical science departments the present grants to graduate students from the National Research Council be continued and increased to more reasonable levels.
150. That to help ensure that physicians in practice maintain their level of competence, medical schools inaugurate or expand their programmes of continuing medical education, and that fees, travel, and living expenses for attendance at such courses be regarded as deductible expenses for income tax purposes.
151. That to reduce our most serious shortages of specialists in areas in which we are recommending rapid expansion of services, medical schools and teaching hospitals introduce or expand their programmes for post-graduate study in psychiatry, physical medicine, ophthalmology, anaesthesiology, pathology, and radiology.
152. That as part of a seven year crash programme, special Professional Training Grants of \$5,000 per year be allocated to medical graduates undertaking post-graduate study in psychiatry, physical medicine, ophthalmology, anaesthesiology, pathology, and radiology.
153. That funds be made available to medical schools to provide adequate remuneration in order to increase the ratio of full-time to part-time staff.

- 154. That funds be made available to those schools that wish to convert to year-round operations for the purpose of improving the quality of instruction and/or reducing the total length of time required to qualify for graduation or licensure to practise.**

12. Dental Education and Recruitment

Our examination of the problem of dental education convinces us that it has two dimensions. The first concerns the needs with respect to training an adequate supply of qualified dentists. The second dimension is the necessity to train dental auxiliary personnel so that the professional capacity of the highly-trained dentist is augmented in even a modest degree as the capacity of the physician is now augmented in great degree by a score or more of different types of auxiliary workers. In comparison with practice successfully demonstrated elsewhere, it has become evident that Canadian dental practice represents a substantial waste of professional talent as dentists continue to perform tasks that can readily be assigned, under their supervision, to lesser-trained workers. We shall consider the question of dentists first.

DENTISTS

Although our calculations show that the number of dentists (full-time and part-time) required for the children's programme will be substantial, nevertheless, the population-dentist ratio for the balance of the children and the adult population will change very little. This ratio is completely unsatisfactory now, and it will remain unsatisfactory. As young people lose their coverage under the Children's Dental Programme at age 18, we can expect a far higher proportion to demand a continuing high level of service than obtains dental care now. And second, as our economic studies indicate, an increasingly prosperous society will be able to afford more dental care than it purchases now. Despite the progress we anticipate from the adoption of fluoridation and the Children's Dental Programme, this generation, we believe, will not be able to meet its *total* dental requirements.

Accordingly, it is necessary to expand our output of dentists to overcome what are even now glaring shortages.

The Commission recommends:

- 155. That funds be allocated from the Health Facilities Development Fund to provide for one-half the cost of the required expansion and renovation of the dental schools now operating at Dalhousie University, University of Manitoba, McGill University, University of Alberta, and the Université de Montréal.¹**

¹ See Chapter 13.

156. That funds be allocated from the Health Facilities Development Fund to provide one-half the cost of construction of five new dental schools in the next ten years, two to be located in Ontario, the University of Ottawa and the University of Western Ontario, and one each at the University of British Columbia (now under development), Université Laval and the University of Saskatchewan, Saskatoon.¹
157. That Provincial Departments of Education, in co-operation with the respective provincial dental associations be encouraged to conduct recruiting campaigns, especially among students in small towns and rural areas, and to attract an increasing number of women into the dental profession.
158. That the Professional Training Grant be increased to provide for an annual grant, on application, of \$2,000 a year to each Canadian dental student with satisfactory performance in his final two years at a Canadian Dental School.
159. That the Health Sciences Research Council endeavour to expand in Canada the amount of research on dental disease and prevention both by conducting intra-mural research and by increasing its grants to universities.
160. That to help ensure that dentists in practice maintain a high level of competence, dental schools inaugurate or expand programmes of continuing education, and that fees, travel and living expenses for attendance at such courses be regarded as deductible expenses for income tax purposes.
161. That funds be made available to dental schools to provide adequate remuneration in order to increase the ratio of full-time to part-time staff.
162. That funds be made available to those schools that wish to convert to year-round operations for the purpose of improving the quality of instruction and/or reducing the total length of time required to qualify for graduation or licensure to practise.
163. That additional funds be made available to universities to enable dental schools to expand graduate programmes for training specialists and to add these programmes where they do not now exist.
164. That to reduce the serious shortage of dental specialists, as part of a seven year crash programme, Professional Training Grants of \$5,000

¹ *Ibid.*

be allocated to dentists undertaking post-graduate study including those taking dental public health and those preparing for university teaching.

165. That the dental schools provide special courses in children's dentistry and that Professional Training Grants of \$5,000 be made available as part of a seven year crash programme for dentists entering the service who wish to take advantage of the special courses, and preparation for specialist qualifications.
166. That the Dental Licensing Authority in every province re-examine the general regulations with respect to the time that immigrant dentists are required to study in a Canadian dental school, with a view to increasing the inflow of qualified dentists.
167. That dentists employed by health agencies and particularly in the children's dental programme be paid adequate salaries to attract a sufficient number of well qualified dentists.

DENTAL AUXILIARIES

The increase in dentists resulting from the above recommendations will be of some help, but will not by any means meet our full needs. To meet the major demands that confront us, the Commission is convinced that it is now necessary to introduce a large-scale training programme to train dental auxiliaries who will be employed solely in the Children's Dental Programme and who will work under the direct supervision of a dentist.¹

We recognize that there may be some temporary opposition, both inside and outside the profession, to our proposal, but the evident deplorable state of dental health in this country,² combined with the scarcity of dentists, the scarcity of qualified professors of dentistry, and the time required to develop new dental schools, make emergency action imperative. Furthermore, the measures we propose have been successful in New Zealand, and are being experimented with and studied in Great Britain. We are confident that we can develop a successful programme in Canada and that all those who are concerned with the dental health of our children will support the proposal to the full.

The proposal is to train, as in New Zealand and now in Great Britain, dental auxiliaries who are qualified to prepare cavities and place fillings in the teeth of children, under strict pre-clinical and clinical supervision. They would also be qualified in dental health education and able to give instruction to patients in self care.

¹ For a complete discussion of this proposal, see Chapter 13.

² *Canadian Dental Association, op. cit.*, pp. 14-15.

It is essential that they be licensed to practise only under the supervision of a licensed dentist and be limited to practise only in the Children's Dental Programme.

These auxiliaries can be trained in two years, as both the New Zealand and United Kingdom experience indicate. They can be trained in a special programme provided by a dental school in adjacent quarters or in an institute of technology, supervised by a Dental School Faculty, and accredited by the Dental Auxiliary Advisory Committee that we recommend.

On the basis of our estimates, it will be necessary to have available at least 1,000 such qualified auxiliaries by January 1968 if the Children's Dental Programme is to begin in that year on a national basis and to increase the number graduated each year to 1,500 in 1971. Since, in order to graduate these auxiliaries by 1968 it will be necessary to enrol the first class by late 1965, no time must be lost in organizing the educational programme for these auxiliaries.

The Commission recommends:

168. That a Dental Auxiliary Advisory Training Committee be appointed to the Department of National Health and Welfare, consisting, among others, of representatives of the Canadian Dental Association, the Provincial Dental Colleges or Boards, the National Dental Examining Board, Canadian Dental Schools, the Dominion Council of Health, l'Association des médecins de langue française du Canada, the Canadian Medical Association (Paediatric Section) and of Canadian women, together with the Director of the Dental Health Division, Department of National Health and Welfare.
169. That this body, together with the Deans of the dental schools develop a curriculum that will qualify the auxiliaries in a two-year programme.
170. That the dental auxiliaries be qualified to prepare cavities and place fillings in the teeth of children, under strict clinical and pre-clinical supervision, and to undertake dental health education and give instruction to patients in self care.
171. That dental auxiliaries be paid an adequate salary in order to attract a sufficient number of applicants.
172. That the Federal Government provide grants to dental schools and/or technical schools to provide the equipment and installations and provide the professional faculty required to establish the educational programmes beginning in 1966, to train a minimum of 1,000 dental auxiliaries per year. Technical Schools should also be assisted to establish courses for the preparation of dental technicians and dental assistants.

- 173. That the Professional Training Grant and the Technical and Vocational Training Grant be increased to provide bursaries to registrants to meet the cost of tuition, books, and maintenance.**

13. Health Professions University Grant

In order to meet our requirements for health personnel we have recommended that the Professional Training Grant be expanded to provide bursaries for undergraduate and post-graduate study by health professionals. We also recognize, that if the Universities of this country are to meet Canada's need for health professionals they too will require additional financial assistance if they are to staff their professional schools. There is also Canada's moral obligation to help in the training of health personnel from the less developed countries.¹ Universities that participate in such a programme will require appropriate financial assistance.

As the Federal Government now provides grants to universities equal to \$2.00 per capita of each province's population, we believe that this arrangement provides a satisfactory technique for allocating funds to universities providing professional education for health personnel. Accordingly we believe that a Health Professions University Grant should be made available to universities through the mechanism of the Federal University Grant. Specific Recommendations regarding the use of the proposed Health Professions University Grant will be found under the following headings:

Nurse Education and Recruitment (Recommendation 132).

Medical Education and Recruitment (Recommendations 153 and 154).

Dental Education and Recruitment (Recommendations 161 and 162).

The Commission recommends:

- 174. That quite apart from any future adjustments to the Federal University Grant, it be increased by an additional annual Health Professions University Grant of at least 50 cents per capita, subject to revision in the light of future needs and developments. This Grant is to be allocated to universities having or establishing medical, dental, public health, pharmacy, nursing, physiotherapy schools, or two year pre-clinical programmes and that the methods of distributing this special Grant be arranged with the Canadian Universities Foundation.**

¹ Canada, because of its French component, is particularly well equipped to assist in the training of French-speaking health personnel from emerging nations.

14. Health Facilities Development Fund

In order to relieve the shortages of health personnel we require not only the necessary teaching staff and number of students but also the facilities where an increasing number and variety of health professions and occupations can be taught. In this respect also Federal assistance on a co-operative basis is essential. To assist the provinces in this regard we recommend the establishment by the Federal Government of a fund to be used for the capital development of service facilities as well as educational institutions. The former purpose can well be served by the present Hospital Construction Grant as a nucleus with the amendments contained in our Recommendations and including in particular also the recommended Dental Construction and Equipment Grant.¹ To this will have to be added the necessary funds for Federal participation in the cost of constructing, expanding, or renovating educational institutions.

Specific Recommendations regarding the use of this new Health Facilities Development Fund will also be found under the following headings:

Mental Health, Alcoholism, and Drug Addiction (Recommendations 13 and 16).

Dental Services (Recommendations 40 and 46).

Nurse Education and Recruitment (Recommendations 132 and 133).

Medical Education and Recruitment (Recommendations 140 and 142).

Dental Education and Recruitment (Recommendations 155 and 156).

The Commission recommends:

175. That the Federal Government establish a ten-year capital development budget to assist in the provision of medical, dental, public health, nursing, and other health profession educational facilities, (including medical schools, dental schools, schools of public health, schools of nursing, basic sciences buildings, and equipment). The fund should be called the Health Facilities Development Fund and should incorporate the present Hospital Construction Grant.
176. That the Hospital Construction Grant regulations be amended immediately to provide one-half the cost of construction of new, or the expansion or renovation of existing hospital out-patient departments.

¹ See Recommendation 40.

15. Health Sciences Research Council

In the preparation of our Report we have examined the many facets of our health services. In this undertaking one of our major problems was to obtain adequate data. Time and again we have mentioned the lack of some essential data; that we have had to rely on estimates; that further study, observation, and experimentation are necessary; all of which lead to numerous suggestions in our Report for further investigation of specific problems.

Two factors are responsible for this state of affairs: (a) the absence of adequate historical and current data, and (b) the many dynamic forces continuously altering the basic problems facing the health services. As a result, our Report falls short in many instances in establishing the facts, and where it succeeds it can often do no more than establish a bench-mark from which further continuing studies are required in order to observe the constant changes.

In the past, health research was by and large synonymous with medical research, but today we cannot ignore the many problems of a social, economic, administrative and purely technical nature which confront our health services. All these must be evaluated if the health services of the future are to be as effective and efficient as we want them to be. Medical research is and will remain an essential and basic part of any health research programme. But it is no longer the only area of investigation. Modern concepts in the study of the etiology of health defects by the methods of epidemiology and human ecology lead directly into an examination of the social environment. We must ensure that the educational programmes for all health personnel keep abreast of new developments.

New methods in the practice of medicine must be applied within the framework of the existing health services which in turn require continuing observation. In view of the complexity and cost of these services it is becoming increasingly important to ensure their optimum efficiency and co-ordination. It is no longer enough to study individual programmes in isolation. The interdependence of programmes is a major factor in their organization and appraisal. Nor does it suffice any longer to study health services alone. Rehabilitation, home care, and general recognition of the social needs of the patient require close integration of health services with other community facilities and organizations. The need for income maintenance provisions during illness and impairment emphasizes the significance of these schemes in the realm of health.

All this means that a host of new disciplines has been added to the traditional health team: the social scientist, the social worker, the architect, the administrator, the statistician, to mention a few, all must participate in the study of health and health services.

Because of the interdisciplinary implications of this development and the need to separate research from the day-to-day operation of health programmes, whether public or private, there is a need for an independent body to undertake this kind of study.

We have noted the recent establishment of the Medical Research Council as an organization parallel to the National Research Council. Rather than setting up an additional body to carry out the kind of health research we have described here, we propose that the functions of the Medical Research Council be broadened to include all health research, with the necessary expansion of its terms of reference and its budget. This new agency could be called the *Health Sciences Research Council*.

Accordingly we recommend in regard to the National Health Grants that the Public Health Research Grant and the portions of other Health Grants devoted to research be transferred to this Council.

Specific Recommendations regarding the role of the Council will also be found under the following headings:

Mental Health, Alcoholism, and Drug Addiction (Recommendations 6, 21 and 28)

Dental Services (Recommendations 43 and 47)

Prescription Drug Services (Recommendation 80)

Optical Services (Recommendation 93)

Prosthetic Services and Appliances (Recommendation 115)

Medical Education and Recruitment (Recommendation 148)

Dental Education and Recruitment (Recommendation 159)

Health Statistics (Recommendations 186, 187 and 189)

National Health Grants (Recommendation 197(c)).

The Commission recommends:

177. That the Medical Research Council be broadened by appropriate legislation to include all fields of health research and renamed the Health Sciences Research Council; as so reconstituted it be recognized by the Government of Canada as its principal adviser in the planning and support of health research and the allocation of research funds; its services be available to provincial governments, voluntary health associations, and universities; and, further, that in the proposed Act for the expansion of the Council, there be provision for the appointment of additional outstanding persons from the health and other professions. An outstanding "layman", not connected with any particular health services programme or agency, should be

appointed Chairman.¹ This does in no way imply any criticism of the structure of the present Medical Research Council or of its distinguished Chairman but in the expanding role of the Council recommended here, embracing other health fields, we believe that a neutral person rather than a member of one of the health professions would be desirable as Chairman as and when a vacancy occurs.

178. That the operating budget of the Council be progressively increased, by an annual amount of \$2,000,000 over the next five years, and that the Council be authorized to hold funds from other sources such as foundations or other agencies.
179. That the Council be encouraged to increase the number of research associates at medical, dental, pharmacy, and university nursing schools and, in addition, make provision for scholarships to recent medical, dental, pharmacy, and nursing graduates not yet qualified as research associates.
180. That grants be available to teaching hospitals for experimental research.
181. That the Council conduct and provide grants for research in the medical, biological, and related sciences, basic drug research, and any other scientific research including research in the social sciences, having as its objective the improvement of the health of the Canadian people.
182. That the Council support research concerning the most effective training and use of health workers.
183. That it be a continuing responsibility of the Council to conduct or provide grants for the conduct of studies evaluating the effectiveness, efficiency, and co-ordination of the various elements of the health services complex.
184. That the Council provide advice and guidance, and participate in developing and maintaining a continuing system of health statistics in Canada as well as in ad hoc studies for the assessment of current health problems and their trends, including the maintenance of a dental health index as established by the Canadian Dental Association.
185. That the Council be authorized to appoint a research director, medical, non-medical research staff, and technical advisory committees as required.

¹The Chairman of the Medical Research Council in Britain is one of the three "lay" members of the Council. See *Medical Research in Britain*, Reference Division, Central Office of Information, London: May 1963, p. 15.

16. Health Statistics

Throughout this Report we have referred on a number of occasions to inadequacies of basic data relating to the health status of the Canadian people, health expenditures, health manpower, and numerous other aspects. The inadequacies are of three types: (a) there are, on the one hand, major gaps in the field of health statistics, and, on the other, there is some duplication; (b) existing data are frequently not comparable because of a lack of uniformity in concepts, classification and coverage; (c) statistics are published after great delay thus impairing their usefulness for analytical, policy and administrative purposes; for example, the latest comprehensive hospital statistics made available to this Commission as at the beginning of 1964 were those for 1960.¹

It has been presented to us that the main gaps in health statistics in Canada centre around three areas: (a) statistics of health care, (b) statistics of general morbidity in the population, and (c) statistics relating to health economics.²

The Dominion Bureau of Statistics, the Government's central statistical agency, has been responsible for the collection of most health statistics. In recent years, in an effort to fill some of the gaps in statistical knowledge in the health field, the Department of National Health and Welfare has undertaken a number of statistical projects and analytical studies. Our Commission has had full access to the health and related statistics produced by the Dominion Bureau of Statistics, and data compiled and analytical studies undertaken by the Department of National Health and Welfare. We found most of the material supplied to us very useful notwithstanding some of the inadequacies noted above and we are particularly indebted to the Department of National Health and Welfare for the studies undertaken³ and research assistance given. But, what impressed us in examining the data and the studies was the lack of co-ordination of the work of these two agencies (and such other agencies which contributed data used by these departments), and the fact that the collection of statistics in many instances were unrelated to the over-all objective of assessing the health needs and health progress of the Canadian people.

We feel that health statistics, just as statistics in other social and economic fields, should not be collected for the sake of statistics or for trivial purposes, but to provide the basic information which contributes to our knowledge of changes taking place in the health status of the Canadian people, or programmes to meet health needs, as well as evaluations of programmes and requirements. Such data, if available on a continuing, comprehensive, com-

¹See Chapter 8, Table 8-2.

²We deal with these matters further in Volume II.

³See Appendix B.

parable, co-ordinated and current basis would aid greatly in the type of health planning such as we recommend be undertaken by the Health Sciences Research Council.

Specific Recommendations regarding health statistics will also be found under the following heading:

Prescribed Drug Services (Recommendation 82).

Health Sciences Research Council (Recommendation 184).

The Commission recommends:

186. That the Dominion Bureau of Statistics and the Department of National Health and Welfare, in consultation with the Health Sciences Research Council, and other appropriate Federal and Provincial Government and non-government agencies present to the Government an outline of a programme of improving health statistics in Canada and that such a programme be adopted.
187. That a more effective division of labour be worked out between the Dominion Bureau of Statistics and Department of National Health and Welfare with the former concentrating on the collection and examination of health and related statistics, and the latter on the interpretative analysis of the data, recognizing that in certain research projects the Department would be the appropriate agency to collect and process the required statistics. These two agencies should co-operate with the Health Sciences Research Council in developing concepts, definitions and methodology relating to health statistics with the latter published without undue delay.
188. That sufficient funds be made available to the Dominion Bureau of Statistics and the Department of National Health and Welfare to undertake a programme of statistical improvement and research.
189. That the statistics and research functions of the Department of National Health and Welfare and the activities of the Dominion Bureau of Statistics in the field of health statistics be dovetailed and co-ordinated with the functions of the Health Sciences Research Council.

III. FINANCING AND PRIORITIES

17. *Over-all Financing*

We have outlined in the Health Charter a basic approach to financing the Health Services Programme as recommended in this Report by saying that we endorse first the principle of prepayment in the personal health care field such as is now in operation in the hospital field, secondly that a prepaid

programme of personal health services should be provincially organized and administered with the staging, timing and scope determined by provincial governments, and thirdly that the Federal Government contribute to the financing of such a programme through federal grants in the following way:

- (1) a contributory grant of 50 per cent of the actual costs;
- (2) an administrative grant of 50 per cent of the administration costs of the programme not to exceed five per cent of the actual costs;
- (3) a fiscal need grant to assist provinces whose fiscal capacities are below the Canadian average to enable these provinces to provide health care services at standards comparable to the rest of Canada taking into account factors of geography, climate, and health resources.

Our studies show that most western nations now devote between 4.5 and 5.5 per cent of Gross National Expenditure to health care, including health services, health capital, research and education of health personnel, with these proportions rising. In 1961, Canada was devoting about 5.4 per cent of Gross National Expenditure when expenditures were measured in *current* dollars and 5.2 per cent when expenditures were measured in *constant* (1957) dollars.

Canadians are now spending 5.4 per cent of Gross National Expenditure on health care. If we carry on with the same services as we have now, the proportion of Gross National Expenditure, measured in *current* dollars, devoted to health care will rise to 5.5 per cent by 1971. If a Health Services Programme such as we recommend is implemented, the proportion of health care expenditures to Gross National Expenditure would be of the order of 6.1 per cent in 1971, or a difference of about one-half a percentage point as between a planned and comprehensive Health Services Programme and our present relatively unplanned and incomplete health care programme.

In terms of *constant* (1957) dollars, if a Health Services Programme such as we recommend is implemented, the proportion of Gross National Expenditure allocated to health care would be of the order of 6.0 per cent in 1971, an increase of .8 percentage points over the decade, and to 6.4 per cent in 1991, an increase of 1.2 percentage points over the thirty-year period.

These percentages have been calculated on the basis of a projected growth of Gross National Expenditure (Gross National Product) over the period 1961-1991 consistent with an average rate of unemployment of 4 per cent a year and average labour productivity which grows at a rate of 2.75 per cent a year. We have also estimated the proportion of Gross National Expenditure devoted to health care on the basis of a lower rate of growth of Gross National Expenditure that is consistent with an average unemployment rate of 5 per cent a year and average labour productivity that grows at

a rate of 2.25 per cent a year.¹ Using this lower projection, the proportion of Gross National Expenditure allocated to health care would be somewhat higher.

On the basis of programmes as currently constituted, the proportion of this smaller Gross National Expenditure, measured in current dollars, devoted to health care would rise to 5.8 per cent by 1971. If a Health Services Programme such as we recommend is implemented, the proportion of health care expenditures to Gross National Expenditure would be of the order of 6.4 per cent in 1971, or a difference of about one-half of one percentage point.

In terms of *constant* (1957) dollars, if a Health Services Programme such as we recommend is implemented, the proportion of Gross National Expenditure allocated to health care would be of the order of 6.4 per cent in 1971 and 7.4 per cent in 1991, an increase of 1.2 percentage points over the decade and 2.2 percentage points over the thirty-year period.

The details of these variations are elaborated in Chapter 20 but it is indicated there that with a lower rate of growth of Gross National Expenditure, the proportion spent on health care likely would not exceed 7 per cent over the period 1961-1991.

We believe there should be an appropriate relationship between the resources devoted by the Canadian nation to health services and resources devoted to other purposes. We are convinced that Canada's expanding economy can afford to devote 6 per cent of the Gross National Expenditure to health services in 1971 and between 6.4 to 7 per cent in 1991, without in any way affecting detrimentally the requirements of the Canadian people for other goods and services to build a stronger economy and to achieve a higher standard of living.

In essence, most of Canada's expanding health care programme could be paid for out of additional earned income resulting from more efficient use of our resources and continuing growth of the economy. We believe that the expansion of the Canadian economy which we envisage over the next 30 years is fully realizable with competent private and public management of our affairs and the determined pursuit of sensible and practical economic policies. We conclude that Canada's future economic growth is of such an order, even under conservative assumptions, that this country can readily implement the health care programme recommended in this Report.

Although the implementation of the public Health Services Programme we envisage would not lead to a substantial increase in the proportion of

¹ For a description of the alternative projections of Gross National Expenditure (Gross National Product) see Chapter 19.

Gross National Expenditure allocated to health care, it is evident that an increased amount of revenue will have to be raised by governments. This is the result of a shift of personal health care expenditures from the private sector to the public sector of the economy to the extent that present direct payments or payments through voluntary plans, would be replaced by taxes or premiums for the future public programme. The individual Canadian will have to pay more in taxes or premiums but he will have more spending power from which to pay. Moreover, an expanding Gross National Product will enable the Federal Government and the Provincial Governments to obtain increasing revenues from the tax system even without substantial changes in taxation rates. In view of the fact that there is another Federal Royal Commission examining the whole field of taxation, we are abstaining from specific recommendations in the field of financing health services. However, we wish to make a few general observations.

We wish first to refer to the recognition by numerous groups encompassing people in all walks of life from one end of Canada to the other, that an expanded health care programme would result in increased taxes including premiums and their expressed willingness to accept such additional taxes, appropriately distributed, to pay for the benefits accruing to Canadians from a comprehensive health care programme.¹

We have outlined several methods of prepayment in the Health Charter including financing by means of premiums, subsidized premiums, sales and other taxes, supplemented by funds, as each province may determine, from its general revenues, and by Federal Government grants as outlined above under (1) to (3). To qualify for a Federal Government grant a province would not be required to conform to any rigid pattern provided the health services included under the plan would cover everyone in the province and be available to all regardless of age, state of health, or ability to pay, upon uniform terms and conditions.

Our analysis in Chapter 10 has brought out the point that provinces have chosen a variety of means for paying hospital costs under the present shared programme. In so doing they have chosen what they consider the means most suitable to their economies. We believe that this pattern of provincial methods of financing should also apply to shared programmes in the personal health care sector as recommended in this Report.

There are other areas of fiscal capacities which provinces may explore as possible sources of financing to pay for their share of a personal health care programme. One possibility would be to incorporate the present employer-employee method of medicare prepayment into a general contributory system to finance all health services.

¹ See Chapter 21.

Another possibility is that urged upon us by La Filiale du Québec de L'Association des Médecins de Langue Française du Canada,¹ of provincial lotteries provided the net proceeds are used solely for health purposes. This would involve, of course, an amendment to the Criminal Code. We do not advocate the use of lotteries. But where a province desires to operate a lottery solely to assist in the financing of health services, the Federal Government, when requested by a province to do so, might submit to Parliament appropriate amendments to the Criminal Code.

The Federal Government's revenue to finance its share of the health care programme including hospital services must come from taxes imposed by Parliament. We are aware of the claims that when governments pay for services out of general revenue, the recipient of the services is not sufficiently aware of the costs to him. Accordingly, in the raising of funds required to pay for its share of the costs of the programme as proposed, the Federal Government, although not earmarking revenues, ought to identify in the mind of the taxpayer such additional taxes with the health care services he is getting.

A final point relates to the effectiveness of the Federal Government's contribution to the operation of programmes generally under provincial jurisdiction through a shared grant system. We have examined the effectiveness of this method of Federal Government's financial participation in provincially operated and administered programmes in Chapter 21,² and we have concluded that this method is the most effective and practical means of initiating *new programmes* in the health field to give all Canadians that equality of opportunity essential to Canadian unity and progress as a nation.

However, we can visualize a time when the comprehensive and universal health care programme which we have recommended has been adopted by all provinces and has been in operation for a number of years thus demonstrating its viability and its full endorsement by the people of Canada.

When that stage has been reached, and if a province so requests, consideration could be given to a method of financing whereby the Federal Government would vacate such a portion of tax fields as would yield revenues to a province corresponding to what it was receiving in the form of Federal grants, provided that the province in question would undertake to operate in the future the programme on the broad basis then established, and continue to participate with the Federal Government and other provinces in the planning and integration of health services for *all* Canadians.

¹ La Filiale du Québec de L'Association des Médecins de Langue Française du Canada, brief submitted to the Royal Commission on Health Services, Montreal, April 17, 1962, p. 37.

² See also Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The Commission recommends:

190. That methods of financing the provincial share of the personal health care programme recommended be left entirely to the provinces as is presently the case with the method of financing the provincial share of the hospital insurance programme.
191. That provinces explore additional methods of financing including the possibility of incorporating the present employer-employee method of medicare prepayment into a general contributory system to finance all health services.
192. That the Federal Government, if requested by a province wishing to operate a lottery solely to assist it in the financing of health services, might submit to Parliament for approval the appropriate amendment to the Criminal Code.
193. That the Federal Government finance its share of costs of the health care programme consisting of a 50 per cent contributory grant of the actual costs, an administrative grant of 50 per cent of the administration costs of the programme not to exceed 5 per cent of the actual costs, and a fiscal need grant to financially weaker provinces through an equitable system of taxation.
194. That taxes collected by the Federal Government to pay for the expanded Health Services Programme be identified in such a manner as to make it clear to the taxpayer that the taxes paid cover the health service benefits made available to him.
195. That as and when the comprehensive and universal Health Services Programme recommended has been adopted by all provinces and has been in operation for a number of years, the Federal Government consider, if so requested by a province, to vacate an appropriate portion of tax fields equivalent to the Federal grant payable to that province provided that the province in question undertakes to operate in the future the programme on the broad basis then established, and continue to participate with the Federal Government and other provinces in the planning and integration of health services for all Canadians.

18. National Health Grants

The National Health Grants, as described in Chapter 10, fall into five main categories:

- (1) Grants for services in respect of specific diseases or for a specific group:
 - (a) Mental Health
 - (b) Tuberculosis Control

- (c) Cancer Control
 - (d) Medical Rehabilitation and Crippled Children
 - (e) Child and Maternal Health
- (2) A grant for general public health activities and services (General Public Health Grant).
 - (3) A grant for research related to public health (Public Health Research Grant).
 - (4) A grant for training of professional health workers (Professional Training Grant).
 - (5) A matching grant for the provision of health facilities (Hospital Construction Grant).

The five disease-oriented grants and grants for specific groups, specifically Mental Health, Tuberculosis Control, Cancer, Medical Rehabilitation and Crippled Children, and Child and Maternal Health, have been used for a variety of purposes including treatment, research, personnel training, and other functions that are traditionally termed "public health". As our Health Services Programme recommendations are adopted by the Federal Government and implemented by the provinces, there should be a "phasing out" of these five grants, although they should be retained for those provinces that do not immediately implement the Health Services Programme. This is especially important in the case of the grant for Medical Rehabilitation and Crippled Children which will probably have to be increased for the interim financing of services to crippled children.

With the implementation of the Health Services Programme there still will remain a number of functions, specifically "public health" and research, now associated with the five grants for specific diseases and specific groups. Thus "public health" functions have been financed by funds from the Mental Health, Tuberculosis, and other Grants, while sizeable sums have been allocated from these specific grants to the Public Health Research Grant. This is evident from the fact that in the recent years total spending on research exceeded the amount specifically allocated to the Public Health Research Grant by over 100 per cent.

The existing Public Health Grant and Public Health Research Grant must necessarily be expanded by allocating to them a certain portion of the five categorical grants as these are discontinued.

One other grant should be retained and augmented. This is the grant for professional training which has also been supplemented by allocations for educational purposes from the other grants, bringing the total spent on professional training to more than double the amount of the Profes-

sional Training Grant. References to the future role of this Grant will be found under the following headings in this chapter:

- Mental Health, Alcoholism, and Drug Addiction (Recommendations 2, 3, 4 and 22)
- Optical Services (Recommendation 94)
- Prosthetic Services and Appliances (Recommendation 115)
- Nurse Education and Recruitment (Recommendations 134-136)
- Medical Education and Recruitment (Recommendations 144 and 152)
- Dental Education and Recruitment (Recommendations 158, 164, 165 and 173)

In addition, as recommended elsewhere,¹ a new grant should be introduced immediately to provide for the children's dental health programme. The Hospital Construction Grant is to be transferred to the Health Facilities Development Fund.

Specific Recommendations regarding the National Health Grants Programme apart from the Professional Training Grant will also be found under the following headings:

- Dental Services (Recommendations 39, 41 and 51)
- Hospital Services (Recommendation 102)
- Home Care Services (Recommendations 122 and 123)
- Health Facilities Development Fund (Recommendation 176)

The Commission recommends:

196. That provision be made for terminating the present pattern of health grants to provinces for specific disease categories and client groups as each province begins to receive its Medical Services Grant, but that the grants be continued in their present form for the remaining provinces until all are in receipt of the Medical Services Grant. The one exception should be the grant for Medical Rehabilitation and Crippled Children, which should be extended as an interim measure in order to implement our Recommendation 200(c) that services to crippled children be given priority.
197. That for those provinces receiving the Medical Services Grant, the following grants be continued; with these modifications:
 - (a) The General Public Health Grant should be increased to \$1.00 per capita.
 - (b) The Professional Training Grant should be increased in accordance with the requirements of our Recommendations respecting

¹ See Recommendation 39.

this Grant. Provision should also be made for greater flexibility in its bursary, book and fee allowances.

- (c) The funds appropriated in the Public Health Research Grant and responsibility for its administration, as well as the amounts in other grants currently being allocated to research should be transferred to the Health Sciences Research Council.**

198. That a Children's Dental Health Grant be introduced in 1967 to underwrite one-half the cost of a Children's Dental Programme to commence in 1968.

19. Priorities

We emphasized in Chapter 1 certain areas in which we consider the need for action particularly urgent. We are firmly convinced that most of the services recommended under the Health Services Programme¹ can be proceeded with promptly and we wish to emphasize again what we have already said² namely that:

"While we are aware that shortages of physicians, dentists, nurses, and other paramedical personnel will make it difficult to establish the full personal Health Services Programme our Charter envisages, none the less the fact that there are shortages must not be used as an excuse to delay initiating programmes and plans."

Where shortages of personnel exist or are anticipated, steps must be taken *immediately* for the education and training of adequate numbers of personnel and, where necessary, for the required expansion of education and training facilities, through the crash programmes we have recommended.

We present here priorities for the implementation of various parts of the programme but in so doing wish to make it clear that this does not mean that one stage of the programme has to be completed before another can be started: certainly one service can be planned while another is being implemented. Planning should normally proceed simultaneously for several services.

The introduction of any service must, of course, be preceded by administrative and fiscal planning.

The Commission recommends:

199. That a Federal-Provincial Conference be convened within six months of the tabling of Volume I of this Report:

- (a) to initiate the necessary planning and fiscal arrangements for the co-ordinated implementation of the programme as a whole;**

¹ See Recommendation 1.

² See Chapter 1.

- (b) to reach agreement on the implementation of the Health Services Programme we have recommended.
200. (1) That pending the holding of this conference, action be taken to implement the recommended changes in the scope of the Hospital Insurance and Diagnostic Services Act, in particular:
- (a) designation of wards of mental hospitals in which patients are receiving active or convalescent care, and tuberculosis' hospitals as "facilities" under the Hospital Insurance and Diagnostic Services Act;
 - (b) provision of out-patient services as a condition of any further payment in respect to in-patient benefits;
 - (c) recognition of diagnostic facilities in recognized clinics and specialists' offices as "facilities" under the Act.
- (2) That during the same period consultation should be initiated with the educational institutions:
- (a) looking to the implementation of those recommendations concerning the crash programmes for the education and training of health personnel;
 - (b) the organization and allocation of the resources required to introduce the Children's Dental Programme.
- (3) That the provision of services to retarded children and to crippled children be made available at an early date under the Mental Health Services and the Health Grants Programmes.
- (4) That the necessary legislation be enacted as soon as possible expanding the Medical Research Council into the recommended Health Sciences Research Council and providing it with adequate funds.

With respect to all the other recommendations, these should be adopted as agreement can be reached with provinces and the organizational and financial arrangements can be made.

IMPLICATIONS OF RECOMMENDATIONS

We can now state what are the significant manpower, facilities and financial requirements implied in our recommendations over the decade 1961-1971 and, when applicable, the period 1961-1991.

Although efficient organization and a continuing re-assessment of the structure of health services will improve the amount and quality of health care, it will not, by itself, be sufficient to provide Canadians with the best possible health care. In the light of the growth and the changing structure of

the Canadian population, their increasing per capita incomes, the development of scientific and medical research, and the growing awareness of the benefits of health services, this can only be done by expanding the supply of qualified health personnel and appropriate health facilities. Despite the advances made over the post-war period and the fortunate position of Canadians, relative to many other countries in the world, the task of providing sufficient personnel and facilities is still a formidable one.

MANPOWER

To provide the health services Canadians will need in the future, the significant health personnel must be expanded in the following manner:

1. Physicians—Between 1961 and 1971, 7,100 physicians must be added to the existing supply. After migration, retirement and other losses, the net addition will be 5,340. Between 1961 and 1991, there must be a net increase in the supply of physicians of at least 19,350.
2. Dentists—Between 1961 and 1971, at least 2,130 dentists must be added to the supply of dentists. After migration, retirement and other losses, the net addition will be 1,270. Between 1961 and 1991, there must be a net increase in the supply of dentists of at least 8,550.
3. Nurses—Between 1961 and 1971 our projections indicate that, as a minimum estimate, around 20,000 nurses must be added to the supply to match growing needs and to replace those leaving the profession, while a maximum estimate suggests that additional estimates could approach 42,000. Many of these additional nurses will require a university degree and post-graduate training.
4. Dental Auxiliaries—Between 1968 when the Children's Dental Programme is projected to begin and 1971, the supply of dental auxiliaries must be increased by about 3,000. By 1976, this number must increase to about 9,000.

FACILITIES

To produce the health services and health personnel required the following significant educational facilities and hospital facilities must be provided:

5. Medical Schools—Between 1961 and 1971, 476 new places must be provided by the expansion of existing medical schools and the construction of 4 new medical schools. Between 1961 and 1991 the number of new places must increase by over 1,000.
6. Dental Schools—Between 1961 and 1971, about 100 new places must be provided by the expansion of existing dental schools, while

between 1961 and 1991 the number of new places must increase by about 300, which will require the construction of 4 additional schools by 1979.

7. Schools for Dental Auxiliaries—By 1968, between 7 and 10 new schools must be established to train dental auxiliaries.
8. Hospital Facilities—Between 1961 and 1971, our projection of the need for hospital care envisages the construction of 60,000 beds. Of these 40,000 are needed to meet the requirements of population growth and improved patient care for the mentally ill and retarded, and 20,000 for replacement of obsolete beds or to compensate for the shift in population from rural to urban areas.

FINANCES

The financial implications of the provision of health services in the future are presented here in two ways: in *constant* (1957) dollars, or real outlays, for a number of years between 1961 and 1991, and in *current* dollars for the years 1966 and 1971. The projection of *constant* (1957) dollar expenditures has been carried out only on the assumption that the programmes recommended in this Report are implemented. The projections of *current* dollar expenditures have been made in two ways: (1) assuming no change in the scope of public health care programmes as they existed in 1961, and (2) assuming the implementation of the programmes recommended in this Report.¹ The proportion of Gross National Expenditure allocated to health care under these various assumptions has been outlined above on pages 84 and 85, the remaining estimates are presented below.

Constant (1957) Dollar Expenditures, 1961-1991: The major financial implications of these projections in *constant* (1957) dollars are:

9. Assuming the implementation of the programmes recommended here and including health research and grants-in-aid of education, between 1961 and 1971 per capita expenditures are projected to rise from \$99 to \$150 and total expenditures to rise from \$1,813 million to \$3,390 million.
10. Between 1961 and 1991, again assuming the implementation of the programmes recommended here, and including health research and health capital, per capita expenditures are projected to increase from \$99 to \$240 and total expenditures from \$1,813 to \$8,427 million.

¹ Because of limitations on the available data it has not been possible to project expenditures on health research and health education assuming no change in the scope of public health programmes as they existed in 1961. For a discussion of this point see Chapter 20.

Current Dollar Expenditures, 1961-1971: The major financial implications of these projections are:

11. Assuming no change in the scope of public health care programmes and excluding expenditures for health research and grants-in-aid of education, between 1961 and 1966 per capita expenditures are projected to rise from \$110 to \$142 and total expenditures to rise from \$2,007 million to \$2,873 million. Between 1966 and 1971 per capita expenditures are projected to rise to \$178, and total expenditures to rise to \$4,015 million.
12. Assuming the implementation of the programmes recommended here, and excluding health research and grants-in-aid of education, between 1961 and 1966 per capita expenditures are projected to rise from \$110 to \$147, and total expenditures to rise from \$2,007 million to \$2,994 million. Between 1966 and 1971 per capita expenditures are projected to rise to \$195, and total expenditures to rise to \$4,407 million. If health research and grants-in-aid of health education are included with projected health expenditures, by 1971 per capita expenditures are projected to amount to \$198 and total expenditures to \$4,481 million.
13. By 1971, the annual cost of continuing our present system of health services, with all its limitations, and inadequacies, would be \$4,015 million or \$178 per person. For an additional \$466 million, or \$20 per person, we will be able to finance the universal, and comprehensive Health Services Programme we recommend.¹ This would make available to all Canadians *the best possible health care* which we can now foresee, but above and beyond that it would provide the foundations upon which the genius of Canada's scientists would flourish and open up vistas of better things to come as science proceeds to uncover the secrets of disease and to discover new methods in the age old struggle to conquer it.

CONCLUSION

In conclusion may we be permitted to hope that all concerned with the good health of Canadians will work together in harmony and dedication at all levels of government. Impressive results can be expected when real co-operation exists and a sense of urgency prevails. For example, we might instance the achievements of busy people with the co-operation of the

¹ For a more detailed discussion, see Chapter 20.

Federal and Provincial Health Departments in the wake of the thalidomide tragedy. An interprovincial committee formed in August 1962 met one month later and during the next six months visited appropriate centres in the United States and Europe assimilating and consolidating all relevant information. In November 1962 a preliminary course was held for representatives from each province, followed by a much more comprehensive course attended by 110 selected representatives from all provinces in May 1963. Research grants applied for and promptly provided by the Federal and Provincial Governments on a cost-sharing basis made possible the establishment of three prosthetic research and training centres in Montreal, Toronto and Winnipeg, which have already produced significant contributions to the care of the children involved. May Canadians not hope for similar prompt action and co-operation in other fields of health care?

Changing Concepts of Health and Health Care

Our Terms of Reference require us to define "the best possible health care", yet despite the advances in medical knowledge in recent decades the concept of health evades precise definition. The more we discover of man's physical and social nature, the more difficult is the task of arriving at a consensus. Through the centuries man has tended to define health in terms of its negative manifestations evident in disease. For primitive man disease was a disaster due to the action of evil spirits; therapy aimed at destroying or driving out the evil spirit. The Egyptians attempted to postulate principles of disease causation based upon observation and experience. Their limited success in determining the nature and treatment of surgical disorders was due to their idea that disease was related to pus formation, fever and rapid heart beat.

The Greeks based the idea of health on empirical observation and the relationship between observations. In this way they attempted to formulate universal laws. The "Hippocratic Corpus", a collection of medical treatises, attempted to explain the relationship between the sick person and the world in which he lived.¹ Life was held to be worth preserving only as long as it could be useful.

The Judeo-Christian tradition stressed the worth and dignity of the person and the sanctity of human life. Since disease caused suffering, the healthy were exhorted to care for the sick; to do so was considered an act of grace. With the Renaissance came experiment and measurement and a greater interest in the physical and spiritual nature of man. This interest in verifiable data concerning man's physical nature was invaluable for the study of disease and its manifestations.

The scientific approach to the nature of man was carried forward by Descartes and Kant, and into the era of scientific medicine in which man was viewed in mechanistic terms and disease the result of the introduction of virulent micro-organisms into the body. This doctrine of specific

¹ Pellegrino, Edmund D., "Medicine, History, and the Idea of Man", in *The Annals of the American Academy of Political and Social Science*, March 1963, Vol. 346, pp. 9-20.

aetiology,¹ while a dynamic force in medical progress, overlooked the fact that "most disease states are the indirect outcome of a constellation of circumstances rather than the direct result of single determinant factors".² This view is now giving way to the idea that the social and psychological as well as the physical characteristics of the total environment, in large part, affect the disease patterns of the community. This theory is related to the Greek idea of health as a proper balance between the mental and the physical, between mind and body.

These ideas of the nature of disease are closely tied to the prevailing philosophical beliefs about the nature of man. They are also related to the individual's experience and learning in a particular social milieu. This experience colours his definition. Professor E. L. Koos considers that, "educational achievement, variations in experience, the ability or inability to purchase medical care, group-held beliefs—all of these can play a part in determining what is to be considered an illness".³ Robinson, Redlich and Myers⁴ have shown that mental illness is defined differently in various socioeconomic strata in the same society. These differences affect a person's recognition of the symptoms of illness and his decision to seek assistance. Human attitudes are the basis for much of the untreated and mistreated illness in our society.

Nevertheless, all societies are similar in that they have recognized certain practices that attempt to transform a state of illness into a state of health. Such practices represent the body of medical knowledge in the society and its application. The extent to which these practices are based on scientific principles and not merely mythical beliefs will affect the rate of progress in the health field. Furthermore, medical knowledge helps to identify and deepen the meaning of illness and the possibilities of regaining "good" health. It is the relationship of these three factors within the total environment which largely determines what a community will consider at any moment of time, as the best possible health care available.

The changing attitude towards sickness, and thus to provision of health care, can be seen in the privileged status that the sick person has come to achieve in western societies.⁵ While we expect the healthy person to perform his social and economic tasks at optimum capacity relative to his age, sex, education and the like, the sick person is recognized as unable, in some degree, to fulfil these responsibilities. This takes account of four

¹ Aetiology is the science of the causes of disease.

² Dubos, René, *Mirage of Health*, New York: Harper & Brothers Publishers, 1959, p. 86.

³ Koos, E. L., *The Health of Regionville*, New York: Columbia University Press, 1954.

⁴ Robinson, H. A., Redlich, F. C., Myers, J. K., "Social Structure and Psychiatric Treatment", *American Journal of Orthopsychiatry*, Vol. XXIV, 1954, pp. 307-316.

⁵ See, for example, *The United Church of Canada*, brief presented to the Medical Services Insurance Enquiry, Toronto, January 1964, pp. 8 and 9.

main features of the status of the sick person:¹ (1) the incapacity due to illness is seen as being beyond the powers of the individual to overcome through his own decisions; it requires some form of therapeutic process for recovery; (2) the fact of recognition of sickness and the resulting incapacity serves to justify the exemption of the individual in varying degrees, ways, and periods of time from his normal obligations; (3) the realization on the part of the sick person that along with the recognition of illness as a legitimate state there goes a corresponding obligation to co-operate in the therapeutic process; (4) the obligation on the part of the sick person and his family to seek adequate help and to co-operate with the competent individuals and agencies in their efforts to bring him back to health.

The tremendous strides of medicine in the last century and more specifically in the past 25 years in industrialized societies have become an accepted fact of social and economic progress and have changed the whole concept of health care. The investigation of cellular structure has been made possible with the improvement and introduction of new types of microscopes and microscopic techniques while organic and physical chemistry and physics have revolutionized physiology. Bacteriology has led to spectacular advances in the field of public health, and in other areas of medical and institutional care. New scientific techniques have facilitated the diagnosis of a wide variety of illnesses, while the introduction of psychiatry has revealed new and hitherto hidden conditions. The rate of progress in medicine as in science generally has increased with the passage of time so that today the unusual discovery is almost common. Complicated surgery, the electron microscope, isotopes, poliomyelitis vaccines and antibiotics and many other new devices and techniques have become part of everyone's vocabulary. This undeniable progress has stimulated the public demand for the very latest innovation in medical care. An example is the increased demand for the so-called "wonder drugs" which, in the eyes of many, completely replace the traditional ways of relieving or curing a variety of ills. This outright demand for "wonder drugs" or other forms of "miracle therapy" is a consequence of the great successes achieved by medicine. A generation which can remember the introduction of the sulpha drugs and the advances which medical technology has made since that time has come to expect "miracles". The growing confidence in modern medicine and health institutions generally is motivating more people to seek health care, sometimes perhaps even to the extent of making excessive demands for services.

While the gradual removal of financial barriers has, no doubt, contributed to the growth of the demand for health care, phenomena like the

¹ Parsons, T., "Definitions of Health and Illness in the Light of American Values and Social Structure", in *Patients, Physicians and Illness*, ed. E. G. Jaco, Glencoe, Illinois: The Free Press, 1958, pp. 165-187.

increasing proportion of voluntary admissions to mental institutions are evidence both of a changing attitude towards what is the appropriate level of health care as well as an indication of the effectiveness of such care.

In spite of the advances in medical care and the substantial improvement in the provision of health services we cannot say that Canadians as yet receive the best possible health care. In part this is the consequence of changes in the environment. But it is also due to the changes wrought by improved medical care itself. The incidence of certain illnesses all vary, for example, according to geographic area, population structure, socio-economic status, occupation, and ethnic background and similar environmental characteristics. Thus increased urbanization, a changing labour force, a different distribution of ethnic groups all may be associated with an increase in the incidence of certain illness and a decrease in the incidence of others. Again the very effectiveness of communicable disease control through the application of medical science to the problems of environmental sanitation and immunization has resulted in a very great reduction in mortality from these diseases. Greater numbers of children are saved to live out their lives. But these changes brought about by medicine, in turn, result in changes in the age structure of the population. As people are saved from dying at an early age, medicine has been faced increasingly with the medical problems of the aged: cancer, cardiovascular-renal diseases, certain types of mental disorder, and chronic disease in general.

It must also be emphasized that while it is possible to measure what Canadians spend on health care, it is much more difficult to define and to measure their need. We are able to measure the volume of hospital care received by Canadians under the Hospital Insurance Plan, the volume of physicians' services rendered by many of the voluntary prepayment plans, and we possess limited data on the consumption of many other health services. In addition, we can measure expenditures on health services and capital. There are, unfortunately, still many areas in which the available data are so limited that it is difficult to measure accurately the volume of care received and the statistics cannot measure the extent of the need of those who do not seek health services. We can, however, identify general areas in which unmet needs exist and where certain services are required and this we must do if we are to be certain that Canadians get the best health care possible.

The concept of health care has spread beyond a narrow definition of health services. In its attempts to control disease the medical profession today is giving increasing recognition to the concept of social medicine which views man as an integral part of his environment. The practitioner tries to evaluate the health of the individual not only in terms of symptoms, but by taking into account the physical, biological and social forces which impinge upon the sick person, and which may affect the course of his

complaint. With this perspective the physician attempts to treat the whole man rather than a specific disease. For example, in a particular ailment he may find it necessary to consider the effects of housing conditions, occupational and family relations as these affect the patient's health.

The recognition that the health of individuals depends on a complex of interrelated factors has posed problems. According to our Terms of Reference this Commission was directed to examine the provision of health services in which we have included the following items: physicians' services, dental services, nursing services, hospital services, prosthetic devices, prescribed drugs, eye care services, home care, rehabilitation, environmental and other public health services. These services are discussed in detail later in this Report.¹ An examination of these services must take account of a number of factors.

The development of the concept of social medicine has led to a greater emphasis on health planning as an integral part of good health care, including measures such as annual physical examinations especially for persons in the older age groups, an emphasis on balanced diet, a planned regimen of exercise for the various age groups, and good health habits in general. This leads our discussion back to the respective role of the individual and society in the prevention as well as the treatment of illness. Positive and enlightened attitudes towards his health and habits to promote it are part of the individual's responsibility which cannot be replaced by compulsion or by public health measures. Health education, aided by increased levels of living and general education, have contributed greatly to many improvements in our health status. Better general hygiene and nutrition, for instance, have no doubt played a considerable part in reducing illness and death from certain diseases though the extent of this contribution would be difficult to measure.

Besides the factors promoting health in general, there are habits and customs which can either help to reduce or, on the other hand, cause certain diseases. Medical science has recently made us aware of the causal relationship between cigarette smoking and lung cancer or certain other chronic conditions. We know—perhaps less specifically—of some connection between exercise or nutrition and heart disease. In the less serious but nevertheless important area of dental health the need for proper dental hygiene has been stressed, as has the need for prevention in the area of venereal diseases. Cigarette smoking, the intemperate use of alcohol, malnutrition, and lack of dental hygiene, are all among the areas where the responsibility for promoting better health lies with the individual. But the individual must be

¹ In limiting our discussion to these services we have excluded certain borderline areas. See Foreword, p. 4, and World Health Organizations, *The Cost and Means of Financing Medical Care Services*, Geneva: The Organization, 1962, pp. 24-29.

provided with the necessary guidance by competent professional people and voluntary and government agencies. Accidents, particularly motor accidents, are another field where the responsibility for prevention rests heavily on the individual though public measures such as traffic control and safety devices are also required. While some cancer may be prevented by curbing the smoking habit, some of it will have to await public measures such as more effective control of air pollution and radiation. The division between public and personal responsibility is not always clear cut or easy to define nor does it remain static. While today, for example, we look to the government to prohibit the sale of certain drugs or food additives because of their known or suspected detrimental effects on health, we are inclined to leave to the individual the responsibility of abstinence or moderation in regard to smoking, the consumption of alcohol or tooth decaying sweets. In all cases, however, we look for scientific research to establish the causal relationships between health, personal habits and environment. All this indicates a new emphasis in the physician's effort directed towards minimizing the health hazards of every day living, and on new areas of research. The success in terms of increased life expectancy which has attended public health programmes of immunization, sanitation and other preventive measures in the control of environmental health hazards has given weight to this shift of emphasis.

We cannot help but emphasize that while the development of the last thirty years has brought undoubted benefits to industrial nations like Canada, such rewards have their attendant costs. We live in a period of rapid social change; the questions society has to answer are constantly changing in dimension and kind. Problems are created when social institutions are slow in adjusting to change while the unprecedented development of cities can be considered as a factor creating special demands that modern social organization is failing to answer adequately.

How are these observations related to the field of health care? This might best be answered by a recent quotation from the Reith Lectures given by Professor Carstairs: "Every stable society imposes rules of behaviour which inhibit the realization of some individual potentialities. This is compensated as a rule by the gratifications which only life in that society can provide. In times of social change, however, this equilibrium tends to become upset, and when this happens conformity to social norms can be maintained only by subjecting some individuals to considerable stress, and causing many of them to break down".¹ Modern medicine is increasingly associating mental and even physiological disturbances with the emotional

¹ Carstairs, G. M., *This Island Now*, The B.B.C. Reith Lectures 1962, London: The Hogarth Press, 1963, p. 64.

tension created by the points of social stress inherent in a rapidly changing and increasingly complex society.

There are certain marked features of modern society that are likely sources of tension. Ease of communication and travel has enabled people to extend their range of contacts outside the immediate communities where they were born and where, prior to World War I, they would probably have lived the remainder of their lives. The break-up of small communities and the concentration of economic activity in large industrial units has forced people to look beyond their family and residential area for employment. Outside these limited spheres the individual establishes an even wider range of social contacts. The sheer weight of numbers involved increases the complexity of social relationships, and the superficial and fleeting nature of the majority of them. The realities of the situation contrast sharply with the norms that are held to govern personal and social relationships. Industrial firms seek to shape their management policies according to the precepts of the human relations manuals, but the shopfloor complaints concerning arbitrary decisions and impersonal contacts illustrate the discrepancy between the ideal and the practice.

The family occupies a place of shrinking importance in the field of social relationships; it has long since ceased to be the unit of economic production. The range of kin embraced by any one family has declined, and this is accompanied by a tendency for the modern family to limit its recognition of kin. Many of the functions formerly performed by a large body of relatives are now carried out by specialized agencies. Modern society is based on the division of labour and believes in the value of specialization. Accordingly, the composite functions of the kinship structure have been whittled away and assumed by specialized bodies outside the family.

This brief discussion of some of the significant changes that are occurring in our society may provoke a desire for a more static social order, but

"The Garden of Eden, the Promised Land that each generation imagines anew in its dreams, and all the Arcadias past and future could be sites of lasting health and happiness only if mankind were to remain static in a stable environment. But in the world of reality places change and man also changes. Furthermore, his self-imposed striving for ever-new distant goals makes his fate even more unpredictable than that of other living things. For this reason health and happiness cannot be absolute and permanent values, however careful the social and medical planning. Biological success in all its manifestations is a measure of fitness, and fitness requires never-ending efforts of adaptation to the total environment, which is ever changing".¹

¹ Dubos, René, *op. cit.*, p. 25.

As long as change in our society was not rapid, our ideas of what constituted good health for Canadians presented few pressing problems. The more rapid changes that have occurred in this century have widened our knowledge and definition of good health, and this in turn has increased the problems associated with the provision of health services.

The growth and shift of population, its mobility, increased urbanization, and the changing income distribution have all led to a growing concern with the mechanics or organization for the maintenance of the best possible health care for all Canadians and the provision of service facilities and finances to reach this goal.

In order, therefore, to be able to assess objectively the facilities and personnel needed to achieve this goal we concluded that we had to examine in detail the health status of the nation; the existing health services; present problems, deficiencies and future requirements; the educational potentialities for health personnel; health costs, present and future, and their effect upon the Canadian economy as well as the ability of the Canadian economy to support an extended programme.

This we have done in the succeeding chapters of this volume, citing in support of every recommendation made in Chapter 2 the background material and evidence upon which we have acted, so that the merits of each recommendation may be weighed in the light of that evidence.

PART II

THE PEOPLE,
THEIR HEALTH STATUS

The Changing Structure of Population and Income

The amount and type of health services required by a nation, the manner in which these services are organized and the relative roles of individuals, voluntary organizations and governments in the provision and organization of health services all are substantially influenced by what we may call demographic factors along with the distribution of income.

In Canada, we have experienced rapid population growth while at the same time the distribution of this population has changed drastically. Yet, what has not changed is that the population has remained sparse relative to the land mass, while the vastness of the land continues to encompass a succession of regions each having different topographic features and population distributions which must be taken into consideration in any efforts organized to deal effectively with sickness through the provision of adequate health facilities and services. Again, although the incomes of Canadians have risen both in total and on a per person basis there still remains a substantial number of Canadians with incomes that are low by the standards of our age.

In this Chapter we therefore present our population projections on which many of our other projections are based, and discuss the changing levels of income which influence substantially the ability of individual Canadians to purchase health services.

POPULATION GROWTH

There can be no doubt that the number of Canadians will continue to grow. Three hundred years ago this country had a population of 3,215 not including the indigenous inhabitants. In 1991 we expect a total of 35,106,700. We have arrived at this latter estimate through an examination of three basic components of population growth; fertility rates, mortality

rates, and the balance of immigration over emigration, or what is termed, net migration.¹ We present projections for the period 1961 to 1991 in Table 4-1.

With the increased proportion of married persons in the population the number of live births was certain to increase. Thus between 1901 and 1961 the percentage of married persons in the population rose from 34.1 to 40.0 while the rate of marriage has remained high down to the present day, although not as high as in the immediate post-war period. The number of live births per 1,000 population in Canada showed a significant increase after World War II reaching a peak in 1954 of 28.5. This rate has since declined and by 1961 amounted to 26.1. Nevertheless, this was still one of the highest crude birth rates in the world and was higher than in any year between 1930 and 1945.

When measuring population trends the fertility rate, i.e., the number of live births per 1,000 females in the child-bearing age groups, is a more sensitive indicator but the projection of these rates also involves some risk. This demographic factor is one which can change unpredictably, particularly for the main child-bearing age groups 20-29. Demographers see the increase in fertility in the late nineteen forties as compensation for the postponement of child bearing in the depression and war years, but they seem at a loss to explain the continuous increase in fertility in the early nineteen fifties in all (female) age groups except 45-49 years of age.² Until recently the combined fertility rate of the three age groups 15-19, 20-24, 25-29 rose continuously; the last few years however have seen a decline from the peak rates of the late fifties.³

During the past four decades there has been a strong tendency for the child-bearing period to be concentrated in the first 12 years of marriage, the result being a decline in the fertility rates in the age group 35 and over. In part, this trend is the result of more people marrying at earlier ages. If couples marry at an early age they are more likely to have children and more of them, than couples marrying later. Between 1941 and 1961 the average age at marriage for single women in Canada declined by more than one year, from 24.4 to 22.9. For bachelors the decline was even more pro-

¹ Like all population estimates ours are not infallible and will have to be revised periodically in the light of new trends, but they do have the advantage of being the most recent, thereby having profited from the over-optimistic or over-pessimistic assumptions of others who have applied themselves to this task before. We were greatly aided by the population counts from the *Census of Canada 1961*. For a technical discussion of the method used in our population estimates see Stukel, A., "Population Projections, 1966-1991", Appendix E in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

² Dominion Bureau of Statistics, *Vital Statistics 1961*, Ottawa: Queen's Printer, 1963, p. 99.

³ *Ibid.*, p. 99.

TABLE 4-1 ESTIMATED AGE-SPECIFIC FERTILITY RATES PER 1,000 WOMEN, CANADA, 1961-1991

Year	Age Groups						Total Fertility	Gross Reproduction Rate
	15-19	20-24	25-29	30-34	35-39	40-44		
1961.....	59.900	229.000	227.000	145.200	85.900	28.000	3,887	1.889
1966.....	60.435	228.750	226.200	141.900	84.200	27.100	3,855	1.874
1971.....	60.970	228.500	225.000	139.200	82.600	26.200	3,824	1.858
1976.....	61.505	227.200	223.000	137.200	81.000	25.400	3,787	1.841
1981.....	62.040	225.800	220.500	135.500	79.200	24.600	3,749	1.822
1986.....	62.573	221.700	216.300	134.200	77.800	23.800	3,692	1.795
1991.....	63.000	219.000	212.000	134.000	76.000	23.000	3,645	1.772

SOURCE: Stukel, A., "Population Projections, 1966-1991", Appendix E, in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

nounced, from 27.6 to 25.8.¹ There is a growing tendency for the prospective brides and grooms of today to consider marriage at an earlier age than their parents. Between 1941 and 1961 the percentage of brides and grooms under twenty years of age increased from 20.4 to 34.7 and from 2.7 to 7.4 respectively.² One further result of these trends has been a tendency to increase the size of the average family. During the decade 1951 to 1961 while the proportion of families with no children or only one child decreased more than six per cent, that of families with two to eight children increased by the same amount and the average number of persons per family rose from 3.7 to 3.9.³

An important feature of population growth is a declining mortality rate. The mortality projections contained in Table 4-2 are based on three major factors: the level of mortality rates, the main causes of death in each age group, and the past rate of change in mortality in Canada and in countries such as Sweden and New Zealand which have enjoyed lower mortality rates than our own. In Canada the number of deaths for every 1,000 population declined from 10.6 in 1921 to 7.7 in 1961.

The decline in mortality rates is most marked for children, especially infants under one year, as more infants live through the dangerous early months.⁴ We expect this trend to continue so that by 1991 further substantial declines will be evident. A significant feature of mortality rates for Canadians aged 1 to 30 has been their tendency to converge towards the same level, and this is particularly noticeable for the first five years of life. This convergence is accompanied by a gradual levelling off of the decline in mortality as we succeed in reducing mortality from disease in these age groups. The main cause of death in recent years is accidents of various types which cannot be expected to decrease as the complexity of living in a highly industrial society increases. The mortality rates for those aged 30 to 65 show the least decline over a number of years. In comparison to the rather spectacular reduction of mortality rate among infants the increased life expectancy of older persons will remain more moderate. In 1960 the mortality rate remained below 25 per 1,000 for both sexes. The mortality rates for the five-year age groups beyond age 65 are expected to show more limited declines and generally remain near their present high levels.

The growth of Canada's future population depends not only on future fertility and mortality rates but also on the rate of net migration; that is on the ability of Canada to hold its own people and the extent to

¹ *Ibid.*, p. 220.

² *Ibid.*, p. 221.

³ Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. II, Part 1, Ottawa: Queen's Printer, p. 43-1.

⁴ Dominion Bureau of Statistics, *Vital Statistics 1961*, *op. cit.*, p. 128.

TABLE 4-2 ESTIMATED AGE-SEX SPECIFIC MORTALITY RATES PER 1,000 POPULATION, CANADA, 1961-1991

Age	1961-1966		1966-1971		1971-1976		1976-1981		1981-1986		1986-1991	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	30.4000	23.0000	26.2000	19.3000	23.0000	16.7000	20.4000	14.8000	18.7000	13.5000	17.4000	13.1000
1	1.8300	1.5200	1.4200	1.1800	1.1500	0.9800	0.9200	0.8200	0.7800	0.7000	0.7200	0.6500
2	1.0800	0.9700	0.9630	0.8720	0.8660	0.7730	0.7690	0.6750	0.6720	0.5670	0.5760	0.4770
3	0.9800	0.8000	0.8780	0.7140	0.8000	0.6280	0.7220	0.5420	0.6440	0.4560	0.5640	0.3700
4	0.8700	0.5900	0.7880	0.5230	0.7280	0.4560	0.6680	0.3880	0.6080	0.3210	0.5480	0.2540
5-9	0.7800	0.3800	0.7060	0.3460	0.6320	0.3120	0.5580	0.2780	0.4840	0.2440	0.4100	0.2000
10-14	0.5700	0.2800	0.5200	0.2460	0.4700	0.2120	0.4200	0.1780	0.3700	0.1440	0.3200	0.1100
15-19	1.1800	0.4600	1.1080	0.4100	1.0360	0.3600	0.9640	0.3100	0.8920	0.2600	0.8200	0.2100
20-24	1.4400	0.5800	1.3680	0.5400	1.2760	0.5000	1.1940	0.4600	1.1120	0.4200	1.0300	0.3800
25-29	1.4600	0.6900	1.3740	0.6520	1.2880	0.6140	1.2020	0.5760	1.1160	0.5380	1.0300	0.5000
30-34	1.5400	0.8500	1.4560	0.7860	1.3700	0.7220	1.2880	0.6580	1.2040	0.5940	1.1200	0.5300
35-39	2.2000	1.4000	2.0840	1.3260	1.9680	1.2520	1.8520	1.1780	1.7360	1.1040	1.6200	1.0300
40-44	3.2000	2.0200	3.0660	1.9000	2.9320	1.7800	2.7980	1.6600	2.6640	1.5400	2.5300	1.4200
45-49	5.7800	3.3800	5.6540	3.2480	5.5280	3.1160	5.4020	2.9840	5.2700	2.8520	5.1500	2.7200
50-54	9.3100	5.2000	9.1960	5.0280	9.0820	4.8560	8.9680	4.6840	8.8500	4.5120	8.7400	4.3400
55-59	15.4300	7.9100	15.3480	7.6080	15.2660	7.3060	15.1840	7.0040	15.1020	6.7020	15.0200	6.4000
60-64	24.2000	13.0800	24.1800	12.7840	24.1600	12.4880	24.1400	12.1920	24.1200	11.8960	24.1000	11.6000
65-69	35.6000	21.0000	35.4800	20.2400	35.3600	19.4800	35.2400	18.7200	35.1200	17.9600	35.0000	17.2000
70-74	53.8000	34.8000	53.5200	33.8800	53.2400	32.9600	52.9600	32.0400	52.6800	31.1200	52.4000	30.2000
75-79	82.5000	58.6000	82.2000	56.9800	81.9000	55.3600	81.6000	53.7400	81.3000	52.1200	81.0000	50.5000
80-84	130.0000	105.6000	127.7200	104.9200	126.3800	104.2400	126.5800	103.5600	125.4400	102.8800	124.3000	102.2000
85+	228.7000	210.8000	226.9800	208.7600	225.2300	206.7200	223.5040	204.6800	221.7720	202.6400	220.0400	200.6000

Source: Stukel, A., "Population Projections, 1966-1991", Appendix E, in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

which we attract citizens of other countries to settle here. Past fluctuations in the inflow of immigrants and the outflow of emigrants make it difficult to estimate the size of future net migration, but with a reasonably high level of economic activity there can be little doubt that Canada will gain more people than it will lose. What is at issue is the size of the annual net immigrant inflow. We have had prepared for us a number of population projections based on the assumption that annual net immigrant inflows could be of the following order: 0; 10,000; 25,000; 50,000; and 100,000. The estimates appear in Table 4-3. The impact of these different assumptions is that by 1991, the difference in population is over 4.5 million between the lowest (0), and the highest (100,000) assumptions concerning net immigration inflows.

TABLE 4-3 PROJECTED TOTAL POPULATION OF CANADA, 1966-1991
(thousands)

Net Immigration at Annual Rate of:	1966	1971	1976	1981	1986	1991
	as at June 1					
0.....	20,021.5	21,983.8	24,253.6	26,858.5	29,714.9	32,785.9
10,000.....	20,076.6	22,105.0	24,449.6	27,136.1	30,081.0	33,250.1
25,000.....	20,159.0	22,286.7	24,743.5	27,552.6	30,630.4	33,946.3
50,000.....	20,296.5	22,589.5	25,233.5	28,246.7	31,545.9	35,106.7
100,000.....	20,571.3	23,195.3	26,213.2	29,635.0	33,377.0	37,427.5

SOURCE: Stukel, A., "Population Projections, 1966-1991", Appendix E in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Throughout this Report, however, we have used a population estimate based on an annual net immigrant inflow of 50,000.¹ This estimate is somewhat lower than that which has characterized the whole post-war period, but this is in accord with the changed economic and political situations which characterize many countries from which Canada has drawn immigrants.

¹ In all the post-war years up to 1957 in all age groups up to 50 there were more male than female immigrants entering Canada. Since 1957 female immigrants have predominated in all ages over 14. For projection purposes, the age distribution of immigrants was assumed to be the average of the years 1950 to 1961. Since the age distribution of emigrants is not available, we assumed it to be the same as that of the population of Canada in any given future quinquennium. Net immigrant age and sex distribution was assumed to be proportionately the same as our population based on the 100,000 net immigration assumption. We assumed further that mortality and fertility rates relating to immigrants were of a similar order as those for the native Canadian population.

Details of the projected growth of our population based on an annual net immigration inflow of 50,000 are specified in Table 4-4, and graphically presented in Chart 4-1.

AGE AND SEX STRUCTURE

With the Canadian population growing from 18.2 million in 1961 to 35.1 million in 1991 we expect that the age-sex structure of the population will undergo change. Implications of this structural change are many, but for our purposes these relate to the significance of various age groups in terms (a) of the health services needed, and (b) labour force projections to supply the personnel to meet these needs, and to provide the basis for a forecast of the growth of income or output.¹

IMPLICATIONS FOR HEALTH NEEDS

It is apparent that more health facilities and services will have to be provided as the population increases. However, different age categories are subject to different illnesses,² and, as there is a shift in the distribution of the population, we will have to provide greater care and treatment for these illnesses. There is a slight increase in the proportion of the population below 19 and above 65, and even if this shift is only a matter of a few percentage points, we can expect a significant increase in terms of absolute numbers. This of course raises the demand for health care, particularly as these groups are the ones which most utilize health facilities and services. Thus, with an increase in population there will be a greater *number* of births for which hospitals and doctors have to be provided. With improvement in life expectancy a significantly greater *number* of the population will be over 65, and we will be faced with meeting the health needs of the aged.

At the same time the young and the aged are least able to pay for their health services. On the average, they have either not as yet entered the labour force, or they have already left it. It should also be noted that women, who form an increasingly larger proportion of the aged, receive generally smaller incomes and are, therefore, in an even more disadvantageous position.

¹ This latter point is discussed more fully in Chapter 19.

² For a detailed discussion of the various types of illness and their incidence, see Chapter 5.

TABLE 4-4 POPULATION OF CANADA 1961, AND ESTIMATED POPULATION WITH NET IMMIGRATION OF 50,000 PER ANNUM

Age Group	Male		Female		Total	
	Number '000	Per Cent	Number '000	Per Cent	Number '000	Per Cent
June 1, 1961						
0-4	1,154.1	12.52	1,102.3	12.22	2,256.4	12.37
5-9	1,063.8	11.54	1,015.7	11.26	2,079.5	11.40
10-14	948.2	10.28	907.8	10.07	1,856.0	10.18
15-19	729.1	7.91	703.5	7.80	1,432.6	7.86
20-24	587.1	6.37	596.5	6.61	1,183.6	6.49
25-29	613.9	6.66	595.4	6.60	1,209.3	6.63
30-34	644.4	6.99	627.4	6.96	1,271.8	6.97
35-39	631.1	6.85	639.9	7.09	1,271.0	6.97
40-44	560.0	6.07	559.0	6.20	1,119.0	6.14
45-49	515.5	5.59	499.8	5.54	1,015.3	5.57
50-54	442.9	4.80	420.3	4.66	863.2	4.73
55-59	362.1	3.93	343.7	3.81	705.8	3.87
60-64	292.5	3.17	291.1	3.23	583.6	3.20
65-69	239.7	2.60	247.4	2.74	487.1	2.67
70-74	196.1	2.13	206.1	2.27	402.2	2.21
75+	238.4	2.59	263.5	2.93	501.9	2.74
TOTAL	9,218.9	100.00	9,019.4	100.00	18,238.3	100.00
June 1, 1971						
0-4	1,382.8	12.17	1,315.0	11.72	2,697.8	11.94
5-9	1,231.2	10.84	1,174.9	10.46	2,406.1	10.65
10-14	1,161.8	10.23	1,113.9	9.92	2,275.7	10.07
15-19	1,072.9	9.45	1,027.6	9.15	2,100.5	9.30
20-24	965.8	8.50	928.4	8.27	1,894.2	8.39
25-29	763.2	6.72	739.9	6.59	1,503.1	6.65
30-34	622.9	5.48	632.8	5.64	1,255.7	5.56
35-39	635.9	5.60	618.7	5.51	1,254.6	5.55
40-44	652.0	5.74	637.8	5.68	1,289.8	5.71
45-49	626.3	5.51	640.2	5.70	1,266.5	5.61
50-54	543.2	4.78	552.3	4.92	1,095.5	4.85
55-59	483.1	4.25	485.5	4.32	968.6	4.29
60-64	394.2	3.47	398.9	3.55	793.1	3.51
65-69	298.5	2.63	313.3	2.79	611.8	2.71
70-74	217.4	1.91	248.5	2.21	465.9	2.06
75+	309.2	2.72	401.4	3.57	710.6	3.15
TOTAL	11,360.4	100.00	11,229.1	100.00	22,589.5	100.00

SOURCE: Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. 1, Part 2, Ottawa: Queen's Printer, 1962, Table 20. Stukel, A., "Population Projections, 1966-1991", Appendix E in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 4-4 POPULATION OF CANADA 1961, AND ESTIMATED POPULATION WITH NET IMMIGRATION OF 50,000 PER ANNUM—*Concluded*

Age Group	Male		Female		Total	
	Number '000	Per Cent	Number '000	Per Cent	Number '000	Per Cent
June 1, 1981						
0-4	1,833.8	12.94	1,743.2	12.39	3,577.0	12.66
5-9	1,607.9	11.34	1,531.8	10.88	3,139.7	11.12
10-14	1,390.1	9.81	1,327.2	9.43	2,717.3	9.62
15-19	1,240.7	8.75	1,187.1	8.43	2,427.8	8.60
20-24	1,179.1	8.32	1,134.7	8.06	2,313.8	8.19
25-29	1,104.4	7.79	1,063.3	7.56	2,167.7	7.67
30-34	997.9	7.04	963.4	6.85	1,961.3	6.94
35-39	784.3	5.54	762.9	5.42	1,547.2	5.48
40-44	632.1	4.46	644.1	4.58	1,276.2	4.52
45-49	632.6	4.46	620.6	4.41	1,253.2	4.44
50-54	632.9	4.47	630.7	4.48	1,263.6	4.47
55-59	587.2	4.14	622.0	4.42	1,209.2	4.28
60-64	483.8	3.41	525.2	3.73	1,009.0	3.57
65-69	397.9	2.81	443.7	3.15	841.6	2.98
70-74	292.9	2.07	343.4	2.44	636.3	2.25
75+	375.5	2.65	530.3	3.77	905.8	3.21
TOTAL	14,173.1	100.00	14,073.6	100.00	28,246.7	100.00
June 1, 1991						
0-4	2,204.0	12.52	2,092.4	11.95	4,296.4	12.24
5-9	2,025.4	11.51	1,926.9	11.01	3,952.3	11.26
10-14	1,841.9	10.46	1,755.4	10.03	3,597.3	10.25
15-19	1,617.5	9.19	1,544.2	8.82	3,161.7	9.00
20-24	1,407.4	8.00	1,348.5	7.70	2,755.9	7.85
25-29	1,272.3	7.23	1,223.2	6.99	2,495.5	7.11
30-34	1,210.6	6.88	1,169.5	6.68	2,380.1	6.78
35-39	1,123.1	6.38	1,085.3	6.20	2,208.4	6.29
40-44	1,003.1	5.70	972.9	5.56	1,976.0	5.63
45-49	779.4	4.43	764.2	4.37	1,543.6	4.40
50-54	615.4	3.50	638.4	3.65	1,253.8	3.57
55-59	594.5	3.38	605.0	3.45	1,199.5	3.42
60-64	564.3	3.20	601.9	3.44	1,166.2	3.32
65-69	483.7	2.75	570.9	3.26	1,054.6	3.00
70-74	359.6	2.04	456.2	2.60	815.8	2.32
75+	498.6	2.83	751.0	4.29	1,249.6	3.56
TOTAL	17,600.8	100.00	17,505.9	100.00	35,106.7	100.00

SOURCE: Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. 1, Part 2, Ottawa: Queen's Printer, 1962, Table 20. Stukel, A., "Population Projections, 1966-1991", Appendix E in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

IMPLICATIONS FOR LABOUR FORCE PROJECTIONS

As a group, the young and the aged are not directly involved in the provision of health services. However, the 0-19 age group is assuming increasing significance as they are the potential suppliers of health workers.

Two characteristics of the health profession are particularly relevant with respect to population. First there is a strong dependence on women workers. The sex distribution seems to be favourable for providing the needed female workers—particularly the 0-19 age group from which the workers are to be drawn.

Secondly, the health industry requires a large number of skilled professional and technical personnel. As these need a high degree of education we should look at recent trends in this field.

Some indication of the degree to which Canadians have availed themselves of the opportunities for education can be obtained from a comparison of data on elementary and secondary school, and university enrolment. Between 1938 and 1959 there was an increase from nearly 87 per cent to 93 per cent of the school age population from five to fourteen years of age enrolled in elementary schools. During the same period the percentage of the population from 15 to 19 enrolled in secondary schools increased from 26.5 to 53.5. Table 4-5 indicates that between 1961 and 1991 the elementary school age population will increase by 73 per cent, and the secondary school age population by 69 per cent. Since 93 per cent of the former group were enrolled in elementary schools in 1959, only a small proportionate increase in enrolment in these schools can be expected. On the other hand, the proportion of the secondary school age population actually attending these schools could increase substantially from the 1959 figure of 53.5 per cent. It is from those who are trained at these two levels that our skilled and semi-skilled workers are drawn, and it is from among those females attending secondary schools that the majority of nurses and paramedical recruits are found. For others working in the health field, however, a university education is essential.

Table 4-5 also indicates that the age group 20 to 24, from which the university population is drawn, is expected to increase by 88 per cent by 1991. There is no doubt that an increasing proportion of this age group will enrol in our universities. Dr. Edward Sheffield has estimated the size of this increase which is shown in Table 4-6. These estimates, however, refer to a larger age group, 18-24, whereas those in Table 4-5 refer to the age group 20-24.

Dr. Sheffield's estimate was made in 1961. In each of the two years since then, the actual full-time enrolment has exceeded his estimate by over 4,300.¹

One factor in economic growth is the proportion of the population that is working and providing the resources to support those groups not yet in the labour force (0-19) and those retired (65+). Our projections indicate no significant change in these proportions, so that the downward shift of age group 20-64 is less than 1 per cent over 30 years and can support a growing number of young and old in the population.

With the Canadian population growing from 18.2 million in 1961 to 35.1 million in 1991 we expect the civilian labour force to increase from 6.5 million to 13.1 million in the same period.² The data in Table 4-5 indicate that with an annual net migration of 50,000 we can expect the age group 15-64, from which the labour force is drawn, to increase from 10.6 million in 1961 to 20.1 million in 1991. We estimate that in the same period the numbers in the labour force recruiting age 15-24 will rise from 2.6 million to 5.9 million.³

In the general population there will be slight differences between males and females in their numerical and percentage increase in the 15-24 or the 15-64 age groups for the period 1961-1991. In the former age group males will increase from 1.3 million to 3.0 million or by nearly 131 per cent while females will grow from 1.3 million to 2.9 million or 123 per cent. In the 15-64 age group males will rise from 5.4 million to 10.1 million or 87 per cent while females will increase from 5.2 million to 9.9 million or just over 90 per cent.

An increasing proportion of Canada's labour force is now made up of women. A similar trend is taking place in all modern industrial nations. The increase was obvious during the two world wars when male labour in Canada was in short supply, and women, both single and married, learned

¹ Dominion Bureau of Statistics, *Survey of Higher Education Part I: 1962-63*, Ottawa: Queen's Printer, 1963, p. 13.

² See Table 19-1.

³ Since our projection of population has been prepared for five year intervals it has been necessary to classify age groups on a 0-4 basis continuing with 5-9, 10-14, 15-19, etc. As a consequence there is a difference between the classification used here and that used in Table 19-1. In Table 4-5 the population of working age includes all individuals aged 15-65. In Table 19-1, the category that corresponds most closely is the civilian non-institutional population age 14 and over. This latter table, while based on the data presented in Table 4-4, includes the age group 14 which is still classified as part of the labour force potential in the Dominion Bureau of Statistics, Labour Force Survey, but excludes the institutionalized population. The inclusion of the age group 14 to 18 may not be representative of the pattern of the future. It is highly reasonable to expect more and more of this group to be found in school and therefore the labour force to be drawn mainly from persons aged 19 and over.

TABLE 4-5 PROJECTED POPULATION OF CANADA, SELECTED AGE GROUPS, 1961-1991

(net immigration—50,000 per annum 1966-1991)*

Population Group	Age Group	June 1, 1961					
		Male		Female		Total	
		Number '000	Per Cent	Number '000	Per Cent	Number '000	Per Cent
Pre-school.....	0-4	1,154.1	12.52	1,102.3	12.22	2,256.4	12.37
Elementary School.....	5-14	2,012.0	21.82	1,923.5	21.33	3,935.5	21.58
High School.....	15-19	729.0	7.91	703.5	7.80	1,432.6	7.86
University.....	20-24	587.1	6.37	596.5	6.61	1,183.6	6.49
Labour Force Recruiting.....	15-24	1,316.2	14.28	1,300.0	14.41	2,616.2	14.35
Population of Working Age.....	15-64	5,378.7	58.34	5,276.5	58.50	10,655.2	58.43
Elderly.....	65+	674.1	7.31	717.0	7.95	1,391.2	7.62
Dependants.....	0-14,						
	65+	3,840.2	41.66	3,742.8	41.50	7,583.1	41.57
Main Family Formation Ages.....	20-29	1,201.0	13.03	1,191.9	13.21	2,392.9	13.12
June 1, 1966							
Pre-school.....	0-4	1,227.7	12.00	1,169.2	11.62	2,396.9	11.81
Elementary School.....	5-14	2,225.6	21.76	2,129.6	21.15	4,355.2	21.46
High School.....	15-19	952.8	9.31	913.4	9.07	1,866.2	9.20
University.....	20-24	743.0	7.26	718.8	7.14	1,461.8	7.20
Labour Force Recruiting.....	15-24	1,695.8	16.58	1,632.2	16.21	3,328.0	16.40
Population of Working Age.....	15-64	6,035.7	59.00	5,935.1	58.96	11,970.8	58.98
Elderly.....	65+	740.5	7.24	833.1	8.28	1,573.6	7.75
Dependants.....	0-14,						
	65+	4,193.8	41.00	4,131.9	41.04	8,325.7	41.02
Main Family Formation Ages.....	20-29	1,351.1	13.21	1,336.6	13.28	2,687.7	13.24
June 1, 1971							
Pre-school.....	0-4	1,382.8	12.17	1,315.0	11.72	2,697.8	11.94
Elementary School.....	5-14	2,393.0	21.06	2,288.8	20.38	4,681.8	20.73
High School.....	15-19	1,072.9	9.45	1,027.6	9.15	2,100.5	9.30
University.....	20-24	965.8	8.50	928.4	8.27	1,894.2	8.39
Labour Force Recruiting.....	15-24	2,038.7	17.95	1,956.0	17.42	3,994.7	17.68
Population of Working Age.....	15-64	6,759.5	59.50	6,662.1	59.33	13,421.6	59.42
Elderly.....	65+	825.1	7.26	963.2	8.58	1,788.3	7.92
Dependants.....	0-14,						
	65+	4,600.9	40.50	4,567.0	40.67	9,167.9	40.58
Main Family Formation Ages.....	20-29	1,729.0	15.22	1,668.3	14.86	3,397.3	15.04
June 1, 1976							
Pre-school.....	0-4	1,604.7	12.66	1,526.2	12.15	3,130.9	12.41
Elementary School.....	5-14	2,621.3	20.69	2,502.0	19.92	5,123.3	20.30
High School.....	15-19	1,166.4	9.20	1,119.6	8.91	2,286.0	9.06
University.....	20-24	1,085.7	8.57	1,042.6	8.30	2,128.3	8.43
Labour Force Recruiting.....	15-24	2,252.1	17.77	2,162.2	17.21	4,414.3	17.49
Population of Working Age.....	15-64	7,510.5	59.27	7,411.0	59.00	14,921.5	59.13
Elderly.....	65+	935.3	7.38	1,122.5	8.94	2,057.8	8.16
Dependants.....	0-14,						
	65+	5,161.3	40.73	5,150.7	41.00	10,312.0	40.87
Main Family Formation Ages.....	20-29	2,070.5	16.34	1,991.7	15.86	4,062.2	16.10

TABLE 4-5 PROJECTED POPULATION OF CANADA, SELECTED AGE GROUPS, 1961-1991—*Concluded*
(net immigration—50,000 per annum 1966-1991)*

Population Group	Age Group	June 1, 1981					
		Male		Female		Total	
		Number '000	Per Cent	Number '000	Per Cent	Number '000	Per Cent
Pre-school.....	0-4	1,833.8	12.94	1,743.2	12.39	3,577.0	12.66
Elementary School.....	5-14	2,998.0	21.15	2,859.0	20.31	5,857.0	20.74
High School.....	15-19	1,240.7	8.75	1,187.1	8.43	2,427.8	8.60
University.....	20-24	1,179.1	8.32	1,134.7	8.06	2,313.8	8.19
Labour Force Recruiting.....	15-24	2,419.8	17.07	2,321.8	16.50	4,741.6	16.79
Population of Working Age.....	15-64	8,275.0	58.39	8,154.0	57.94	16,429.0	58.16
Elderly.....	65+	1,066.3	7.52	1,317.4	9.36	2,383.7	8.44
Dependants.....	0-14,						
	65+	5,898.1	41.61	5,919.6	42.06	11,817.7	41.84
Main Family Formation Ages.....	20-29	2,283.5	16.11	2,198.0	15.62	4,481.5	15.87
June 1, 1986							
Pre-school.....	0-4	2,022.1	12.78	1,921.0	12.21	3,943.1	12.50
Elementary School.....	5-14	3,449.7	21.81	3,287.1	20.90	6,736.8	21.36
High School.....	15-19	1,394.8	8.82	1,333.0	8.48	2,727.8	8.65
University.....	20-24	1,253.5	7.92	1,202.4	7.64	2,455.9	7.79
Labour Force Recruiting.....	15-24	2,648.3	16.74	2,535.4	16.12	5,183.7	16.43
Population of Working Age.....	15-64	9,152.5	57.85	8,986.7	57.15	18,138.9	57.50
Elderly.....	65+	1,195.8	7.56	1,531.3	9.74	2,727.1	8.64
Dependants.....	0-14,						
	65+	6,667.6	42.15	6,739.4	42.85	13,407.1	42.50
Main Family Formation Ages.....	20-29	2,451.2	15.49	2,357.8	14.99	4,809.0	15.24
June 1, 1991							
Pre-school.....	0-4	2,204.0	12.52	2,092.4	11.95	4,296.4	12.24
Elementary School.....	5-14	3,867.3	21.97	3,682.3	21.03	7,549.6	21.50
High School.....	15-19	1,617.5	9.19	1,544.2	8.82	3,161.7	9.00
University.....	20-24	1,407.4	8.00	1,348.5	7.70	2,755.9	7.85
Labour Force Recruiting.....	15-24	3,024.9	17.19	2,892.7	16.52	5,917.6	16.86
Population of Working Age.....	15-64	10,187.6	57.88	9,953.1	56.86	20,140.7	57.37
Elderly.....	65+	1,341.9	7.62	1,778.1	10.16	3,120.0	8.89
Dependants.....	0-14,						
	65+	7,413.2	42.12	7,552.8	43.14	14,966.0	42.63
Main Family Formation Ages.....	20-29	2,679.7	15.22	2,571.7	14.69	5,251.4	14.96

*See footnote 3, p. 117.

SOURCE: Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. 1, Part 2, Ottawa: Queen's Printer, 1962, and Stukel, A., "Population Projections, 1966-1991", Appendix E in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

new skills. Despite this more than sixfold increase since 1901 we still fall behind Britain and the United States in this respect.

Of the number of women now working, a large proportion are married. This is a relatively recent development; in 1931 only 10 per cent of the women working were married, but thirty years later this figure had risen to 48.0 per cent, and as we indicate in Chapter 19, this trend is likely to continue. Under certain circumstances this may have significant implications for the health and welfare of the children of working mothers, but systematic investigations to test this claim are notable for their scarcity.

TABLE 4-6 FULL-TIME ENROLMENT IN CANADIAN UNIVERSITIES AND COLLEGES, BY SEX, AND AS A PERCENTAGE OF THE POPULATION 18 TO 24 YEARS OF AGE, 1950-51 TO 1960-61, PROJECTED TO 1970-71

Academic Year	Full-time Enrolment as Per Cent of Population 18 to 24		
	Male	Female	Total
1950-51.....	7.02	1.88	4.44
1951-52.....	6.65	1.80	4.21
1952-53.....	6.50	1.76	4.13
1953-54.....	6.53	1.80	4.17
1954-55.....	6.86	1.90	4.40
1955-56.....	7.25	2.02	4.65
1956-57.....	7.69	2.18	4.95
1957-58.....	8.17	2.38	5.31
1958-59.....	8.85	2.59	5.72
1959-60.....	9.14	2.80	6.01
1960-61.....	9.84	3.21	6.57
1961-62.....	10.39	3.34	6.92
1962-63.....	11.03	3.62	7.38
1963-64.....	11.70	3.93	7.89
1964-65.....	12.41	4.26	8.42
1965-66.....	13.17	4.62	8.98
1966-67.....	13.97	5.02	9.59
1967-68.....	14.82	5.44	10.23
1968-69.....	15.72	5.90	10.92
1969-70.....	16.68	6.40	11.65
1970-71.....	17.69	6.94	12.44

SOURCE: Sheffield, Edward F., *Enrolment in Canadian Universities and Colleges to 1970-71 (1961 projection)* Ottawa: Canadian Universities Foundation, 1962, p. 13.

URBAN—RURAL DISTRIBUTION

The rapid growth of population in Canada is accompanied by a tendency for our people to live in urban centres and this trend is not likely to change. Slightly more than 37 per cent of Canadians lived in urban areas in 1901. Sixty years later the proportion was nearly 70 per cent. Looking ahead, we expect that a still larger proportion of our population will be living in cities and other urban areas in 1991.

This concentration of population in urban centres has required a similar concentration of service facilities, among them health services, and has also promoted the growth of large hospitals serving as medical centres for treatment, teaching and research. The availability of these and other health services has stimulated their increased utilization. On the other hand, the decreasing proportionate size of our rural population has accentuated problems in the provision of an acceptable standard of health services in rural areas. The metropolitan area, the rural areas that surround our urban centres, the Newfoundland outports which can be reached only by sea, the isolated settlements on the Alaska Highway, the sparsely settled northern areas of the provinces, and the growing population in the Arctic regions, all must be provided with health care. Outlying settlements, however, cannot provide the resources to support an adequate level of services and facilities; help must be sought elsewhere. The problems of distance, then, are compounded by the relative emptiness of the land as we move northward from Canada's southern boundary. This can make the provision of services, whether health or any other, a costly undertaking. Services and facilities are concentrated in the areas with a relatively high population density.

These problems are increased by the mobility of the population. The ability of industrialized centres to attract labour depends not only on the present location of the work force, but also on its mobility and growth potential. There is little doubt that Canadians are a mobile people especially intra-provincially. In 1948, for example, 17.4 per cent of all families receiving family allowances moved from one residence to another in the same province. In 1961 this proportion was 24.6 per cent.¹ If we combine interprovincial and intra-provincial family movement these proportions are increased from 19.1 per cent for 1948 to 26.2 per cent in 1961. These are conservative estimates if applied to labour force mobility since they do not take account of the highly mobile single person. This mobility, while essential to achieving a satisfactory rate of economic growth, raises problems of the

¹Central Mortgage and Housing Corporation, *Canadian Housing Statistics, 1961*, Ottawa: The Corporation, 1962, Table 68, p. 44.

provision and continuity of health care, and the portability of hospital and medical care and social security benefits across provincial boundaries.

The tabulation below shows that between 1956 and 1961 seven provinces experienced a net loss of population due to interprovincial mobility, while the remainder showed a net gain.¹ It should also be noted that the three provinces which experienced a net gain had the highest per capita incomes.

Province of Origin	Net Migration	
	Loss	Gain
Newfoundland.....	19,781	
Prince Edward Island.....	2,725	
Nova Scotia.....	24,492	
New Brunswick.....	32,539	
Quebec.....	24,716	
Ontario.....		127,738
Manitoba.....	29,046	
Saskatchewan.....	63,496	
Alberta.....		30,613
British Columbia.....		27,394
Northwest Territories and Yukon.....		11,050

CHANGING INCOMES OF CANADIANS

Canadians have improved their economic position substantially over their history and this has been particularly true in the period since the great depression. Moreover this improvement has extended to almost all Canadians whether their incomes were low or high. Despite this improvement there still remain a large number of Canadians with low incomes—incomes that are too low to provide themselves or their families with the health services they need.

It is not necessary for us to emphasize that the incomes of almost all Canadians have risen substantially from the low levels of the great depression. Thus in 1931 of the families where the head was a salaried or wage worker, 43 per cent earned less than \$2,000 a year. In 1951, after eliminating the effects of price change, this percentage had fallen to 20 per cent. Between 1951 and 1959 the *real* income of all urban residents,

¹ Estimated from Department of National Health and Welfare, *Family Allowance and Old Age Security Statistics*, June 1956-May 1961.

whether in or out of the labour force, rose by a further 25 per cent, and there has been some increase since that date.¹ Moreover this improvement has been achieved with a substantial increase in leisure as the length of the work year and the working life has declined. Although our knowledge of level of income among agricultural families is less precise, there is no doubt that they too have improved their situation appreciably from the dark days of the depression. Meanwhile the steady decline in the number of farm families, and the increased size of farms as well as mechanization of farm operations, and increasing use of scientific farming methods has meant increased productivity, and with it rising farm incomes. As a consequence, subsistence farming yielding low incomes has become less significant than it was a generation ago.

The significant increase in real income experienced since the end of World War II has brought a large and growing proportion of Canada's population closer to a level of affluence which makes it possible for many workers to abandon occupations in low-paid sectors of the economy, such as marginal agriculture, for higher paid employment in urban areas. In addition, advances in medical science and the investment of resources in health services have contributed to a decline in mortality and morbidity in many areas, thus reducing the number of families with low income due to the loss of the bread-winner. The general increase in the amount of education made available to the younger generation has made them more productive, more mobile and therefore raised incomes generally.² Finally, until recently, the relative scarcity of labour in a period of high demand, the consequence of the low birth and immigration rates of the depression period, and the willingness to use part-time help, have made it possible for a great many more people—particularly married women and young adults—to find employment, so that in many cases households now have two or three income-earners whereas they formerly only had one or none. Rising social security expenditures have bolstered family income. Young married couples both work until the arrival of children. Married women return to work when their families enter school or leave home. The contribution of married women to the nursing staff of hospitals is only one instance of this development.

It is evident, however, that rising levels of employment and improved productivity, along with the increased real income that accompany them, may not directly affect the aged, the blind, the disabled and those living in

¹ Goldberg, S. A., Podoluk, Jenny R., "Income Size Distribution Statistics in Canada", a Survey and some analysis, in *Income & Wealth Series VI*, International Association for Research in Income and Wealth. London: Bowes and Bowes, 1957 and Dominion Bureau of Statistics, *Distribution of Non-Farm Incomes in Canada by Size 1959*, Ottawa: Queen's Printer, 1962, pp. 11 and 16.

² In making this general observation we are not unmindful of the fact that we still have in Canada a large number of young people with inadequate training and skills contributing the highest proportion of any age group to the ranks of the unemployed.

areas of declining economic activity, since they either are not in the labour force or in the main stream of economic growth. Here social policy has helped by distributing the fruits of economic progress more broadly. Rising social security expenditures have meant that the present productive generation has transferred income from themselves to the young or to the old in the expectations that this process will continue as one generation replaces another. Yet the growth of government transfer payments has not changed the pattern of income distribution materially. In fact, the tendency has been for low income families, particularly single person householders, to increase in numbers since higher incomes received by the aged now permit them to maintain their own household rather than live with their relatives, and more younger people live away from home. From 1929 to 1950 the ratio of families in lower income brackets declined somewhat, but since 1951 the trend appears to have been reversed. For example, urban families comprising 40 per cent of income earners in the lower income strata made up 13.6 per cent of total income earners in 1951 as against 16.2 per cent in 1959.¹

While it is true that on the average people are now better off materially than ever before, there still remains a significant proportion of the Canadian population with low incomes or earnings.² Where the line defining low incomes or earnings should be drawn is a matter of debate. In part it depends on the size of the family that must be supported, and in part it depends on the needs of this family. A young single person, in good health and living at home earning \$2,000 a year could not be considered a low earning or a low income person. A family of six with such earnings could hardly be considered as anything but living at the margin of subsistence. Again a young couple with an income of \$2,000 to live on while they acquire a professional education can borrow against their potential earning power to finance a higher level of living in the present. A low income in this instance would not indicate a low level of living. On the other hand, an aged couple with the same income, but with few assets and high expenses for health care could well be classed as a low income family.

Lack of comprehensive and detailed statistics on the low income families in Canada has made it difficult to estimate what proportion

¹ That refers to families in the two lowest income quintiles (See Dominion Bureau of Statistics, *Distribution of Non-Farm Incomes in Canada, by Size 1959, op. cit., p. 12.*)

² In a discussion of income distribution we must keep in mind the distinction between earnings and income. By earnings, we mean "the total amount of money received by wage earners as cash wages and salary, Armed forces and Reserve Units' pay commission, tips, or piece rate payments from all employers—before deductions for such items as income tax, unemployment insurance, medical plans, union dues, pension plans or insurance plans". By income we mean earnings *plus* all other income such as that from business or professional practice, family allowances, old-age assistance and security payments, other government transfer payments, retirement pensions, bond and bank interest and dividends, other investment income and all other money income. Dominion Bureau of Statistics, *Census of Canada 1961, Vol. III, Part 3, Ottawa: Queens' Printer, 1963.*

of the Canadian population should be classed as low income or low earning families, but the data available do suggest that if \$2,000 is taken to represent low earnings or income, a sizeable percentage of our people fall into this category. This can be seen from an examination of the income data presented in Tables 4-7 to 4-9. These data are divided into a) the incomes of families and persons not in families, in urban and rural non-farm areas and b) farm families and individuals.

If we take \$2,000 as a low income in 1961, Table 4-7 indicates that almost 13 per cent of all families of 2 or more persons, rural non-farm and urban, had incomes of less than this amount. The number of families in this classification approached one-half a million families. If we were to include all families with incomes of less than \$3,000, these families would account for nearly 25 per cent of total families.

For persons not in families in 1961, 804,056 persons, or 57 per cent of all persons in this category had incomes of less than \$2,000, while almost 38 per cent had incomes of less than \$1,000.

If all persons in families with incomes of less than \$2,000 a year were combined with individuals not in families earning less than this amount, almost 2.3 million Canadians can be said to be in a low income family or nearly 15 per cent of all persons living in urban and rural non-farm areas. As we have indicated, low income families and individuals may be young people just beginning their working life, but the size of the group suggests that a large number are families with children or elderly persons with incomes sufficient to maintain life, but insufficient to provide even a moderately comfortable standard of living or a margin against the uncertainties of illness or accident.¹

Data relating to the income of farm families are limited and are indicative only of the relative magnitude of the size of the low income population. Table 4-8 presents data for the year 1958, the most recent data now available. In that year families and individuals not in families, with incomes of less than \$2,000 a year, accounted for over three-quarters of a million persons or 35 per cent of all persons living on farms. Many changes have occurred since 1958 and the proportion of persons in low income families would almost certainly be less in 1961. However, it is likely that the proportion would be still higher than in urban areas. Thus Table 4-9 indicates that nearly 26 per cent of rural non-farm families had less than this amount of income compared with 10 per cent of urban families. For individuals not living in families, the percentages were 75.5 and 53.6 per cent respectively.

¹ Information relating to the low income families and individuals by age is available for non-farm families and individuals in 1959. See Dominion Bureau of Statistics, *Distribution of Non-Farm Incomes in Canada by Size, 1959, passim, op. cit.* In that year, of all families receiving incomes of less than \$1,000, 38 per cent were 65 or over, while in the income class \$1,000 to \$1,499, 53 per cent were over 65. On the other hand, between 40 and 50 per cent of the families receiving less than \$2,000 were in the age group 30-64.

TABLE 4-7 A. INCOME DISTRIBUTION OF FAMILIES AND PERSONS NOT IN FAMILIES, RURAL NON-FARM AND URBAN, FOR CANADA, 1961*

Item	Total	Under \$1,000†	\$1,000- 1,999	\$2,000- 2,999	\$3,000- 3,999	\$4,000- 4,999	\$5,000- 5,999	\$6,000- 7,999	\$8,000- 9,999	\$10,000- and over
Families and Persons not in Families	15,376,213	1,048,348	1,218,591	1,596,044	2,320,886	2,495,551	2,069,221	2,365,474	1,054,156	1,207,942
Cumulative Aggregate	—	1,048,348	2,266,939	3,862,983	6,183,869	8,679,420	10,748,641	13,114,115	14,168,271	15,376,213
Per Cent	100	6.8	7.9	10.4	15.1	16.2	13.5	15.4	6.9	7.8
Cumulative Per Cent	—	6.8	14.7	25.1	40.2	56.4	69.9	85.3	92.2	100.0

B. INCOME DISTRIBUTION OF FAMILIES, RURAL NON-FARM AND URBAN, FOR CANADA, 1961*

Family (2 or more persons)	3,656,968	163,590	302,115	382,235	557,366	603,192	502,464	596,134	262,787	287,085
Cumulative Aggregate	—	163,590	465,705	847,940	1,405,306	2,008,498	2,510,962	3,107,096	3,369,883	3,656,968
Per Cent	100	4.5	8.3	10.4	15.2	16.5	13.7	16.3	7.2	7.9
Cumulative Per Cent	—	4.5	12.8	23.2	38.4	54.9	68.6	84.9	92.1	100.0

C. INCOME DISTRIBUTION OF PERSONS NOT IN FAMILIES, FOR CANADA, 1961*

Persons not in Families	1,407,276	530,340	273,716	216,676	195,073	92,774	43,761	31,800	9,991	13,145
Cumulative Aggregate	—	530,340	804,056	1,020,732	1,215,805	1,308,579	1,352,340	1,384,140	1,394,131	1,407,276
Per Cent	100	37.7	19.4	15.4	13.9	6.6	3.1	2.3	0.7	0.1
Cumulative Per Cent	—	37.7	57.1	72.5	86.4	93.0	96.1	98.4	99.1	100.0

*These statistics for 1961 do not include families and persons not in families, resident in the following households: (1) farm (2) institutions (3) collective households (e.g., hotels) (4) Northwest Territories (5) transient and those living abroad and (6) military personnel stationed abroad.

†Includes families and/or individuals without income.

SOURCE: Based on Dominion Bureau of Statistics, *Summary Family Income Statistics*, Ottawa: Queen's Printer, 1963, and supplementary data.

TABLE 4-8 FARM INCOME DISTRIBUTION OF FAMILIES AND PERSONS NOT IN FAMILIES, FOR CANADA, 1958

Item	Total	Under* \$1,000	\$1,000- 1,999	\$2,000- 2,999	\$3,000- 3,999	\$4,000- 4,999	\$5,000- 5,999	\$6,000- 7,999	\$8,000- 9,999	\$10,000 and over
Families and Persons not in Families.....	2,275,137	364,391	422,885	454,265	375,518	240,382	149,472	148,644	58,826	60,754
Cumulative Aggregate.....	—	364,391	787,276	1,241,541	1,617,059	1,857,441	2,006,913	2,155,557	2,214,583	2,275,137
Per Cent.....	100	16.0	18.6	20.0	16.5	10.6	6.6	6.5	2.5	2.7
Cumulative Per Cent.....	—	16.0	34.6	54.6	71.1	81.7	88.3	94.8	97.3	100.0

*Includes those without income.

SOURCE: Based on Dominion Bureau of Statistics, *Farm Income and Expenditure Survey, 1958*, Central Research Division, and supplementary data.

**TABLE 4-9 PERCENTAGE DISTRIBUTION OF FAMILIES AND PERSONS
NOT IN FAMILIES WITH INCOMES LESS THAN \$2,000,
RURAL NON-FARM AND URBAN, 1961***

Province	Families		Persons not in Families	
	Number	Per Cent	Number	Per Cent
<i>Canada</i>				
Rural Non-farm.....	182,174	25.9	170,309	75.5
Urban.....	283,531	9.6	633,747	53.6
TOTAL.....	465,705	12.8	804,056	57.2
<i>Newfoundland</i>				
Rural Non-farm.....	19,408	47.1	9,662	89.4
Urban.....	9,052	20.0	9,983	71.9
TOTAL.....	28,460	32.9	19,645	79.6
<i>Prince Edward Island</i>				
Rural Non-farm.....	2,473	35.9	2,521	88.6
Urban.....	1,226	16.4	2,470	66.4
TOTAL.....	3,699	25.7	4,991	76.0
<i>Nova Scotia</i>				
Rural Non-farm.....	18,039	30.3	18,237	84.0
Urban.....	12,646	14.5	23,817	62.7
TOTAL.....	30,685	20.9	42,054	70.4
<i>New Brunswick</i>				
Rural Non-farm.....	16,692	33.0	12,585	82.4
Urban.....	7,559	12.6	15,592	63.7
TOTAL.....	24,251	21.9	28,177	71.0
<i>Quebec</i>				
Rural Non-farm.....	40,376	27.8	32,990	80.1
Urban.....	83,282	9.8	177,424	55.7
TOTAL.....	123,658	12.4	210,414	58.5
<i>Ontario</i>				
Rural Non-farm.....	33,505	17.2	41,855	71.9
Urban.....	96,308	8.2	240,783	50.5
TOTAL.....	129,813	9.4	282,638	52.8
<i>Manitoba</i>				
Rural Non-farm.....	10,511	31.6	9,231	74.4
Urban.....	13,835	9.8	32,514	54.7
TOTAL.....	24,346	13.9	41,745	58.2
<i>Saskatchewan</i>				
Rural Non-farm.....	16,576	34.8	14,268	72.6
Urban.....	12,367	13.1	23,380	55.7
TOTAL.....	28,943	20.4	37,648	61.0

TABLE 4-9 PERCENTAGE DISTRIBUTION OF FAMILIES AND PERSONS NOT IN FAMILIES WITH INCOMES LESS THAN \$2,000, RURAL NON-FARM AND URBAN, 1961*—*Concluded*

Province	Families		Persons not in Families	
	Number	Per Cent	Number	Per Cent
<i>Alberta</i>				
Rural Non-farm.....	10,292	25.0	10,838	68.8
Urban.....	17,657	8.9	38,834	48.8
TOTAL.....	27,949	11.7	49,676	52.1
<i>British Columbia</i>				
Rural Non-farm.....	14,024	17.3	17,804	65.6
Urban.....	29,531	10.2	68,757	55.1
TOTAL.....	43,555	11.9	86,561	57.0
<i>Yukon</i>				
Rural Non-farm.....	278	16.6	314	52.0
Urban.....	68	6.0	193	31.8
TOTAL.....	346	12.3	507	41.9

*Excludes families and persons not in families resident in farm households.

Income includes:

- (a) Gross cash wages, salaries, commissions and tips (before deduction for income tax, pensions, unemployment insurance, etc.).
 - (b) Net income (gross income less operating expenses) earned from own business or from a professional practice.
 - (c) Family allowances.
 - (d) Old-age assistance and old-age security payments.
 - (e) Other government transfer payments, e.g., unemployment insurance, workmen's compensation, veterans' pensions and allowances, disability pensions, mothers' allowance, etc.
 - (f) Retirement pensions.
 - (g) Bond and bank interest and dividends.
 - (h) Other investment income, e.g., net rents, mortgage interest, estate income, etc.
 - (i) All money income, e.g., annuities, income from roomers and boarders, alimony, etc.
- Family income is the total of the above sources of income reported by all members of the family 15 years of age and over.

SOURCE: Dominion Bureau of Statistics, *Summary Family Income Statistics*, Ottawa: Queen's Printer, 1963.

The data presented in Table 4-9 also indicate that there are a sizeable number of low income families and individuals in every province. The percentage of low income families, however, differs significantly between provinces. Newfoundland has the highest proportion of families and individuals, both rural non-farm and urban, with incomes below \$2,000, while Ontario, Alberta and British Columbia have the lowest proportions.

Similar results to those presented above are obtained from data relating to the earnings of wage-workers, evident in Tables 4-10 to 4-12. It must be emphasized that the statistics are limited to wage-earners only and do not

include the self-employed such as farmers and professional men; or the retired, permanently disabled, or persons who, for one reason or another, are not considered as members of the labour force. The financial status of those groups excluded from the category of wage-earners can be seen to some extent from the data presented above on income distribution.

Table 4-10 indicates that in current dollars there was a significant decline in the percentage of wage earners earning less than \$2,000 between the years 1951 and 1961. While 44.3 per cent of all male wage earners earned less than this amount in 1951, by 1961 the percentage had been reduced to 21.2 per cent. In the case of female wage earners the reduction was from 85.9 to 50.3 per cent. For all wage earners, while it is obvious that there has been a substantial drop during the decade, a significant percentage, nearly 30 per cent, remained in this low earning range.

So far, our analysis has been presented in current dollar terms. But we know that prices have risen between 1951 and 1961 and as a result the purchasing power of the Canadian dollar has been somewhat reduced.

Between 1951 and 1961 the general price level in Canada has risen by 23.6 per cent.¹ Hence the purchasing power of the Canadian dollar has declined by a corresponding proportion during the decade. If we wish to

TABLE 4-10 PERCENTAGE OF WAGE EARNERS EARNING LESS THAN \$2,000 PER YEAR, BY SEX, PROVINCES AND CANADA, 1951 AND 1961

Province	1951			1961		
	Male	Female	Total	Male	Female	Total
Canada.....	44.3	85.9	54.9	21.2	50.3	29.6
Newfoundland.....	69.1	96.0	74.3	36.8	72.2	44.3
Prince Edward Island.....	75.9	97.2	81.7	46.6	73.8	54.9
Nova Scotia.....	58.5	93.3	65.9	29.8	64.4	38.5
New Brunswick.....	64.2	93.2	71.2	34.3	64.2	42.3
Quebec.....	50.5	98.4	60.3	22.4	53.2	31.0
Ontario.....	35.4	81.0	47.5	16.3	45.9	25.3
Manitoba.....	46.2	90.6	58.6	20.9	53.2	31.1
Saskatchewan.....	57.0	90.8	66.6	27.1	50.6	34.2
Alberta.....	45.4	87.3	55.7	20.5	50.0	29.2
British Columbia.....	35.1	84.3	46.9	17.0	46.5	25.4
Yukon.....	29.7	65.7	34.2	15.6	42.1	21.5

SOURCE: Based on Table 4-6.

¹ This percentage is based on the implicit price index of Gross National Expenditure which rose from 86.3 in 1951 to 106.7 in 1961 (Base of Index: 1957=100). The data are from Dominion Bureau of Statistics, *National Accounts Income and Expenditure by Quarters, 1947-1961*, Ottawa: Queen's Printer, 1962, pp. 75 and 77.

obtain a rough indication of how many dollars a person had to earn in 1961 to purchase as many goods and services as a person earning \$2,000 in 1951, we have to add 23.6 per cent. This works out to earnings of \$2,472 in 1961 which are equivalent to the purchasing power of earnings of \$2,000 in 1951.

To make a comparison of earnings distribution between 1951 and 1961 in terms of purchasing power of the earnings in these two years the comparison must be made between persons earning less than \$2,000 in 1951 and those earning \$2,499¹ or less in 1961. Table 4-11 indicates that in 1951 there were 44.3 per cent of male wage earners in the labour force earning less than \$2,000 while in 1961, 28.4 per cent were earning less than \$2,500. The corresponding figures for female wage earners are 86.0 per cent and 65.7 per cent. The data suggest that in real terms the earnings position of low wage earners has improved at a notably lesser rate than is indicated by current dollar figures.

Nor can it be said that the average wage earner has reached the stage where he could be considered affluent. Thus in 1961, as shown in Table 4-11, the *median* earnings in *current* dollars of wage earners in Canada amounted to \$3,625 for males and \$1,990 for females,² while the proportion earning more than \$6,000, although up significantly from 1951, still accounted for only 12.4 per cent of male wage earners and 1.2 per cent of female wage earners.

Canadian averages can conceal significant differences both between provinces and between regions. In 1961, for example, only about 16 per cent of male wage earners in Ontario and British Columbia earned less than \$2,000, in the Atlantic Provinces the percentage ranged between 29.8 per cent and 46.6 per cent. Such comparisons are limited by the fact that the data generally exclude those whose incomes are earned in agriculture or other occupations not characterized by wage earning and by differences in the price structure between regions, but they are sufficiently reliable to indicate that low incomes are much more characteristic in certain regions of Canada than in others.

Regional differences in earnings are also evident from Table 4-12 where in 1961, in every province the proportion of male earners in rural areas earning less than \$2,000 a year was twice that of urban areas. For female wage earners the rural urban difference is even greater.

Although there are still a large number of Canadian wage earners with low earnings this would be of little social significance if such wage earners were unmarried, young, healthy men or women just beginning their working life, or if they were married women with husbands earning an adequate

¹ We have added the \$2,000-2,499 group in 1961 to obtain comparable data in real terms between 1951 and 1961, to take account of the effect of a 23.6 per cent increase in the general price level during the decade referred to above.

² Median earnings are defined as that level of earnings which divides the earning group in half. Fifty per cent earned more and 50 per cent earned less than this amount.

TABLE 4-11 WAGE EARNERS, REPORTING EARNINGS, 15 YEARS OF AGE AND OVER, BY SEX, SHOWING MEDIAN EARNINGS, AND NUMBER AND PERCENTAGE DISTRIBUTION BY AMOUNT OF EARNINGS, DURING THE 12 MONTHS PRIOR TO THE CENSUS DATE, CANADA, PROVINCES, AND TERRITORIES, 1951 AND 1961

Province	Year	Median Earnings		Total Number Reporting Earnings*	
		Male	Female	Male	Female
		\$	\$		
Canada.....	1951	2,127	1,221	2,897,997	993,645
	1961	3,625	1,990	3,622,033	1,475,113
Newfoundland.....	1951	1,342	587	60,458	14,347
	1961	2,645	1,256	71,786	19,445
Prince Edward Island.....	1951	1,193	694	12,719	4,790
	1961	2,134	1,179	14,655	6,469
Nova Scotia.....	1951	1,777	857	130,346	35,551
	1961	2,957	1,499	145,665	50,175
New Brunswick.....	1951	1,601	893	90,056	28,088
	1961	2,723	1,519	107,265	39,050
Quebec.....	1951	1,986	1,150	803,202	277,276
	1961	3,367	1,904	1,015,267	388,224
Ontario.....	1951	2,308	1,372	1,113,934	398,148
	1961	3,935	2,137	1,378,061	601,081
Manitoba.....	1951	2,080	1,159	144,765	56,301
	1961	3,546	1,889	171,136	78,854
Saskatchewan.....	1951	1,794	1,137	101,556	39,824
	1961	3,304	1,978	126,112	55,059
Alberta.....	1951	2,098	1,897	163,624	53,033
	1961	3,679	1,999	241,668	101,142
British Columbia.....	1951	2,300	1,285	271,723	85,586
	1961	4,126	2,116	342,182	133,518
Yukon.....	1951	2,596	1,592	3,166	455
	1961	4,556	2,321	4,142	1,202
Northwest Territories.....	1951	2,594	1,198	2,448	246
	1961	4,520	2,240	4,094	894

TABLE 4-11 WAGE EARNERS, REPORTING EARNINGS, 15 YEARS OF AGE AND OVER, BY SEX, SHOWING MEDIAN EARNINGS, AND NUMBER AND PERCENTAGE DISTRIBUTION BY AMOUNT OF EARNINGS, DURING THE 12 MONTHS PRIOR TO THE CENSUS DATE, CANADA, PROVINCES, AND TERRITORIES, 1951 AND 1961—Continued

Province	Wage Earners Reporting Earnings by Amount of Earnings						
	Year	-\$500		\$500-999		\$1,000-1,499	
		Male	Female	Male	Female	Male	Female
		%	%	%	%	%	%
Canada.....	1951	7.3	18.9	8.6	19.7	11.9	25.9
	1961	4.8	13.4	4.8	11.8	5.6	12.4
Newfoundland.....	1951	17.6	45.1	21.1	28.2	16.4	15.2
	1961	7.3	19.2	8.7	19.7	11.6	21.6
Prince Edward Island.....	1951	20.9	39.0	21.7	28.2	19.2	23.5
	1961	10.9	27.5	12.8	17.0	12.6	15.4
Nova Scotia.....	1951	11.2	32.0	13.0	25.2	15.3	23.5
	1961	6.4	19.6	6.9	15.4	8.3	15.0
New Brunswick.....	1951	11.1	31.2	15.9	23.9	19.3	25.3
	1961	7.5	19.9	8.9	15.3	9.9	14.2
Quebec.....	1951	7.0	17.3	9.6	24.5	14.8	27.2
	1961	4.3	10.9	5.1	11.7	6.4	14.1
Ontario.....	1951	5.7	15.8	5.9	16.0	9.2	24.4
	1961	4.2	12.8	3.8	10.9	4.2	11.3
Manitoba.....	1951	8.0	19.8	9.2	20.3	11.5	31.0
	1961	5.0	13.9	4.9	12.0	5.6	13.1
Saskatchewan.....	1951	12.7	25.3	13.9	17.2	13.2	27.5
	1961	7.1	16.1	6.8	12.3	7.1	9.9
Alberta.....	1951	7.6	21.5	9.2	18.3	12.0	27.4
	1961	5.4	15.4	4.9	12.0	5.3	11.4
British Columbia.....	1951	5.7	18.4	5.9	16.5	8.8	26.5
	1961	4.5	14.7	4.0	11.7	4.4	10.7
Yukon.....	1951	3.8	19.6	4.5	14.3	8.3	12.7
	1961	3.1	12.3	4.0	11.2	4.2	9.7
Northwest Territories.....	1951	2.7	13.8	4.5	26.8	9.2	23.6
	1961	3.6	13.5	4.1	12.8	4.4	8.9

TABLE 4-11 WAGE EARNERS, REPORTING EARNINGS, 15 YEARS OF AGE AND OVER, BY SEX, SHOWING MEDIAN EARNINGS, AND NUMBER AND PERCENTAGE DISTRIBUTION BY AMOUNT OF EARNINGS, DURING THE 12 MONTHS PRIOR TO THE CENSUS DATE, CANADA, PROVINCES, AND TERRITORIES, 1951 AND 1961—*Continued*

Province	Wage Earners Reporting Earnings by Amount of Earnings						
	Year	\$1,500-1,999		\$2,000-2,499		\$2,500-2,999	
		Male	Female	Male	Female	Male	Female
		%	%	%	%	%	%
Canada.....	1951	16.5	21.5	22.6	9.8	15.5	2.8
	1961	5.4	12.7	7.8	15.4	7.8	11.0
Newfoundland.....	1951	14.0	7.5	13.8	2.8	7.5	0.7
	1961	9.2	11.7	11.0	9.8	8.1	5.9
Prince Edward Island.....	1951	14.1	6.5	11.3	2.1	5.5	0.5
	1961	10.3	13.9	12.6	12.8	8.9	6.7
Nova Scotia.....	1951	19.0	12.6	19.2	4.8	11.4	1.4
	1961	8.2	13.4	11.1	14.3	9.8	8.2
New Brunswick.....	1951	17.9	12.8	17.0	5.1	8.9	1.2
	1961	8.0	14.8	11.3	14.9	9.7	8.2
Quebec.....	1951	19.1	19.4	22.3	8.3	13.1	2.2
	1961	6.6	16.5	9.4	16.3	9.6	11.0
Ontario.....	1951	14.6	25.2	23.7	12.6	18.9	3.8
	1961	4.1	10.9	6.4	14.9	7.0	11.9
Manitoba.....	1951	17.5	19.5	23.8	6.7	13.6	1.9
	1961	5.4	14.2	8.0	17.0	7.7	10.4
Saskatchewan.....	1951	17.2	20.8	19.7	7.2	10.8	1.5
	1961	6.1	12.3	8.6	15.9	7.4	10.2
Alberta.....	1951	16.7	20.1	23.1	9.2	14.0	2.4
	1961	4.9	11.2	7.5	15.3	6.6	10.3
British Columbia.....	1951	14.7	22.9	24.9	10.6	18.6	3.2
	1961	4.1	9.4	5.8	15.2	5.0	10.9
Yukon.....	1951	13.1	19.1	17.2	18.0	15.6	9.0
	1961	4.2	8.9	5.1	12.3	4.5	9.0
Northwest Territories.....	1951	13.4	16.3	17.0	9.8	16.9	4.9
	1961	5.3	9.4	6.0	11.2	5.1	7.6

TABLE 4-11 WAGE EARNERS, REPORTING EARNINGS, 15 YEARS OF AGE AND OVER, BY SEX, SHOWING MEDIAN EARNINGS, AND NUMBER AND PERCENTAGE DISTRIBUTION BY AMOUNT OF EARNINGS, DURING THE 12 MONTHS PRIOR TO THE CENSUS DATE, CANADA, PROVINCES, AND TERRITORIES, 1951 AND 1961—*Concluded*

Province	Wage Earners Reporting Earnings by Amount of Earnings						
	Year	\$3,000-3,999		\$4,000-5,999		\$6,000*	
		Male	Female	Male	Female	Male	Female
		%	%	%	%	%	%
Canada.....	1951	12.0	1.2	4.2	0.2	1.5	0.03
	1961	22.1	15.8	29.3	6.3	12.4	1.2
Newfoundland.....	1951	6.5	0.3	2.3	0.08	0.7	0.007
	1961	19.3	9.1	18.2	2.6	6.7	0.3
Prince Edward Island.....	1951	4.8	0.1	1.9	0.02	0.6	—
	1961	14.6	5.5	13.0	1.0	4.2	0.2
Nova Scotia.....	1951	7.8	0.6	2.4	0.1	0.06	0.01
	1961	21.3	10.1	20.9	3.3	7.0	0.6
New Brunswick.....	1951	6.8	0.3	2.3	0.1	0.7	—
	1961	20.6	9.6	18.3	2.8	5.8	0.3
Quebec.....	1951	9.1	0.8	3.4	0.1	1.5	—
	1961	23.3	14.1	25.0	4.7	10.2	0.7
Ontario.....	1951	14.9	1.7	5.2	0.3	1.8	—
	1961	21.8	18.3	33.8	7.4	14.8	1.6
Manitoba.....	1951	10.9	0.7	4.0	—	1.6	—
	1961	24.4	13.3	28.0	5.2	11.0	0.9
Saskatchewan.....	1951	8.6	0.5	3.1	0.1	0.7	—
	1961	22.7	14.3	24.4	8.1	9.9	1.0
Alberta.....	1951	11.9	1.0	4.3	0.1	1.4	—
	1961	22.7	15.5	29.1	7.6	13.6	1.2
British Columbia.....	1951	15.4	1.7	4.6	0.3	1.4	—
	1961	19.8	17.9	36.6	8.0	15.7	1.6
Yukon.....	1951	26.1	6.6	9.9	0.7	1.4	—
	1961	13.8	21.4	39.1	13.7	21.8	1.5
Northwest Territories.....	1951	25.8	4.9	9.2	—	1.3	—
	1961	13.6	15.8	30.6	16.8	27.3	4.0

*Excludes wage earners who did *not report* earnings and wage earners who did not work for wages or salary during the 12 months prior to the census date, June 1, 1961, e.g., members of religious orders who received payment in kind only.

SOURCE: Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. III, Part 3, Ottawa: Queen's Printer, 1963, Table 9.

TABLE 4-12 PERCENTAGE OF WAGE EARNERS EARNING LESS THAN \$2,000 PER YEAR, BY SEX, CANADA AND PROVINCES, RURAL AND URBAN, 1961

Province	Male	Female
Canada		
Rural.....	38.5	66.8
Urban.....	15.7	47.5
Newfoundland		
Rural.....	55.6	86.0
Urban.....	24.2	67.5
Prince Edward Island		
Rural.....	60.1	77.0
Urban.....	30.4	71.1
Nova Scotia		
Rural.....	43.3	72.8
Urban.....	21.2	59.5
New Brunswick		
Rural.....	51.4	74.5
Urban.....	19.8	58.8
Quebec		
Rural.....	48.1	70.6
Urban.....	17.3	49.7
Ontario		
Rural.....	29.2	60.5
Urban.....	13.4	44.0
Manitoba		
Rural.....	41.6	60.7
Urban.....	15.5	52.0
Saskatchewan		
Rural.....	45.9	61.1
Urban.....	17.2	47.1
Alberta		
Rural.....	38.2	61.4
Urban.....	15.7	48.2
British Columbia		
Rural.....	21.7	59.5
Urban.....	15.6	44.3

SOURCE: Based on Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. III, Part 3, Ottawa: Queen's Printer, 1963, Table 14.

wage. Unfortunately the statistics available at present do not enable us to separate out these individuals from those for whom low wages constitute a real burden. On the other hand, a sizeable proportion of this group does consist of married couples with children who find it difficult to provide more than the basic necessities of life out of such resources. Indeed as shown in Tables 4-7 to 4-9, if we were to include the families where the sole wage earner earned less than \$3,000 a year it could hardly be said that they have sufficient income to provide the necessities of life including adequate health care.

Although we recognize that some persons in 1961, because of their youth or their limited responsibilities could provide the health services they needed from an income of \$2,000, the fact that a sizeable number of Canadians had less than this income suggests that there is still a substantial segment of our population who may need health care and cannot afford to pay for it. How far their needs are currently met through public assistance benefits is discussed in Chapter 18.

Poverty is relative and families with low real incomes have continued to persist despite the fact that most Canadians are better off than a generation ago. Many individuals and families have moved up in the income scale but there remains a sizeable proportion of our population whose level of income keeps them at or below what is now considered a minimum standard of living in Canada.

Health Status of the Canadian People

INTRODUCTION

The purpose of health services is to preserve or improve the health of the people or minimize the consequences of ill health. Hence their effectiveness will be judged, in the final analysis, by the extent to which they enable us to prevent, diagnose, or successfully treat illness, and to rehabilitate those who are physically or mentally incapacitated by illness or injury.

An assessment of the health status of the Canadian people thus becomes a necessary prerequisite to a comprehensive examination of our health services which, in common with most other organizational arrangements, have a self-perpetuating tendency. The more unwieldy, complex, and costly these institutions and organizational arrangements become, the greater the necessity for evaluating them against their basic objectives.¹

Measuring Health in Terms of Illness

Any quantitative evaluation of the health status of a people relies largely on the traditional method of measuring the negative manifestations of health. These may present themselves as physical or mental disease and injury or health impairment, or what is termed "morbidity".

Morbidity is a state of health below a given norm; it may be due to illness, injury, or impairment. The norm may vary, however, depending on its purpose, all the way from perfect health and the ability to undertake the most arduous physical and mental tasks, to just adequate health required to perform certain ordinary activities of everyday life. Thus in assessing what could be a desirable norm, account must be taken of both objective and subjective criteria.

¹ One of the necessary elements for such an evaluation is the availability of adequate statistical and other factual information. Much remains to be done, however, to produce in the health field a statistical system comparable to those available in other areas of our social fabric.

Objective criteria are those set by organizations or institutions requiring a given standard of health for the performance of certain duties, e.g., the fitness requirements for persons entering the Armed Forces, to qualify for certain particularly arduous tasks, such as pilots, policemen, firemen, and also for certain other types of work, e.g., industrial employment, or government service. These criteria are objective only with respect to the task for which the health of the individual is examined. A person fit for one type of activity may not be fit for another.

Objective criteria may be based also on medical knowledge and experience which enable the physician to determine beyond any reasonable doubt the existence of impaired health.

Subjective criteria imply a judgment of the individual about the effectiveness of his state of health to perform certain functions. These criteria vary further because the same state of morbidity will affect different individuals in different ways. One person may ignore a headache as a passing phase not detrimental to his general well-being while another may want to see a physician and interrupt his normal activity.¹ Even though health defects may vary in their effect on the organism of the individual, the existence or absence of such defects can, of course, often be objectively established.

The physician's evaluation of a patient's health, in turn, may depend on his training and the availability of modern diagnostic services. The physician's interpretation even of objectively determined symptoms may lead to different assessments or diagnoses.

Taking account of both the objective and the subjective criteria we arrive at a concept of health which enables us to establish a state of well-being in which people are able to perform certain tasks and lead a satisfactory life. If this dual objective is not achieved because of either physical or mental disease, illness, injury, or other health impairment, we speak of morbidity. The concept generally used then is one of adequate health in relation to certain objectives and not a concept of "perfect" health or health *per se*.²

By adequate health we mean the highest health standards for the Canadian people consistent with the most effective use of the expanding

¹ The Canadian Sickness Survey undertaken by the Dominion Bureau of Statistics and the Department of National Health and Welfare in 1950-51 showed that persons in Newfoundland reported proportionately fewer minor illnesses than people in British Columbia. There may have been a variety of reasons for this but one possible explanation would be the different attitudes of residents of Newfoundland in what they consider an adequate state of health as compared with the attitudes of persons living in British Columbia.

² The problem of arriving at a generally acceptable and quantifiable concept of positive health has been the subject of extensive studies but so far without conclusive results.

resources of this country and employing all the preventive, diagnostic, treatment, and rehabilitative services we are capable of rendering.¹

Measurement of health is beset with numerous difficulties. The transition from health to ill-health—or morbidity—is often a gradual one and hence the decision where one state ends and the other begins involves some judgment. Frequently we have to rely on the subjective judgment of the patient or the art rather than the science of the physician. The same applies throughout the various stages of illness until the climax of severity, namely death, is reached.

This is one reason why the measurement of mortality has continued to be the most reliable single indicator of health conditions. It can, however, no longer remain the only such indicator. One of the spectacular results of the advances in health care is the effective control of some once fatal diseases, particularly the infectious ones, and the elimination of fatality or its postponement in the case of other diseases. Also, the impact of many long-term diseases, which constitute our main health problems today, lies not only in their fatality—for some like mental disease or arthritis have very low fatality rates—but also in their duration, the extent and degree of disability they cause, and the amount of services they require. These factors are not reflected by mortality data. But as soon as we move away from the clearly identifiable event of death to other characteristics of morbidity, we encounter difficulty in reliably and objectively establishing the facts. Scientific efforts to quantify the non-fatal characteristics of morbidity are relatively new, and little or no effort has so far been made in Canada to establish an integrated system of data collection to supplement the well-established mortality statistics. In the briefs submitted to this Commission frequent references are made to the inadequacy of data concerning Canada's health status and health needs. For the present, only mortality and some hospital statistics are available to indicate historic trends and to make comparisons with other countries. Even these data need to be improved to adapt them to today's health problems.

Because of inadequate data it will be necessary to refer to sources which are often limited in scope or outdated, and some judgment regarding their general validity will be made. We believe, however, that the data presented in this chapter appear to be adequate for a reasonable assessment of the health status of the Canadian people and the main health problems facing our nation today. Still the need of improving and extending data on the health of the Canadian people remains an important task for the future.²

¹ For a statement of principles of achieving the highest possible health standards see Health Charter for Canadians in Chapter 1.

² See Chapter 2, Recommendations 184 and 186-189.

MORTALITY AND THE LIFE SPAN

General Mortality Trends in Canada, 1931 to 1960

General mortality refers to mortality from all causes without regard to mortality from specific diseases. Four different, though related, measures of mortality are presented in Table 5-1.¹

1. *The Number of Deaths (Col. 1)*: The number of deaths occurring in the country will largely depend on the size of the population. As Canada's population has increased, the number of deaths must also be expected to increase. Therefore, the absolute number of deaths in itself does not permit any conclusions regarding health conditions. Its growth, however, from some 100,000 in 1931 to about 140,000 in 1961 indicates a greater volume of deaths occurring, hence a greater number of fatal illnesses and accidents and a correspondingly greater demand for services to treat such illnesses. This is a reminder that even under improving health conditions the demand for services must be expected to rise as the population increases.
2. *The Crude Death Rate (Col. 2)*: In order to determine whether the impact of mortality today is higher or lower than before, we have to separate it from the population growth and see what would have happened if the size of the population had not changed. This is done by employing a rate, which tells us how many died in each year for every 1,000 of the population. The crude death rate shows that in 1960 only 7.8 people died per 1,000 population, compared to 10.2 deaths per 1,000 population in 1931. Mortality has thus improved (by about 25 per cent according to this measure) although the absolute number of deaths has increased. This measure is thus independent of the size of the population but it does not compensate for changes in the age and sex composition of the population. Nevertheless, the crude death rate from year to year does reflect changes in mortality, and is therefore a useful broad measure of trends and of comparisons with other countries where more refined indicators are not readily available.
3. *The Standardized Death Rate (Col. 3)*: This rate is adjusted so as to eliminate the effect of a changing age and sex composition of the population. We know that the chances of dying increase with age. Therefore, the greater the proportion of older people, the greater the probability of more people dying. The standardized or adjusted rate

¹ Rates are computed as follows in this chapter, unless otherwise stated: general death rates (i.e., deaths from all causes) per 1,000 population; causes of death rates per 100,000 population; infant mortality rate per 1,000 live births; maternal mortality rate per 100,000 live births.

is computed by applying the number of people at each age dying annually to a population with a uniform age composition.¹

4. *The Age-proportional Death Rate (Col. 4)*: This is a death rate calculated by weighting the number of deaths according to the reciprocal of the age at which they occur. This eliminates the need for referring to any particular age distribution of the population and reflects in a general way the decreasing social impact of death with increasing age at which it occurs.² By this measure mortality has declined by 39 per cent from 1931 to 1960.

At our present stage of knowledge, lower mortality is generally regarded as a sign of better health. This is largely justifiable because it means a reduction in the final consequence of ill health, but if we succeed in keeping people alive longer, we face the task of keeping them healthier. Life is not synonymous with health. We are succeeding today in prolonging the life of many patients without always curing their disease. But "where there is life, there is hope" and once we have extended life there is always the possibility—or hope—of a cure or of arresting the disease process. Reduced mortality then is at least a first step towards better health. The mortality rate, however, does not tell the whole story because it does not reflect changes in fields such as mental health and diseases which may be largely disabling without necessarily being fatal.

Age, Sex, and Regional Differences

The reduction of mortality has not been evenly distributed among the various age and sex groups of the population. The crude death rate in 1960 stood at 9.3 per 1,000 population for males and at 6.6 for females. If, by the use of the standardized³ rate, we adjust for the different age distribution between males and females, we find that the more rapid decline of mortality among females has led to a widening gap between the rates for the two sexes. Although in 1930, the female standardized rate amounted to 92 per cent of the male rate, by 1960 it was reduced to only 71 per cent; some of the causes for the greater premature mortality among males will be referred to in the following pages.

¹ In this case, Canada's population in 1956, the mid-year between two decennial Censuses and two revisions of the International Classification of Diseases.

² If it is accepted that an individual's contribution to society culminates when he approaches the peak of his career and has raised his children, then it can be assumed that his inevitable death will be less disrupting the later in life it occurs. This can be expressed statistically by weighting the number of deaths according to the age at which they occur, decreasing the weight with increasing age. This method oversimplifies the impact of death among some younger age groups but it is valid for the vast majority of deaths in Canada of which in 1960 about 77 per cent occur at ages of 50 and over, and 80 per cent at age 45 and over. See also: Kohn, R., "An Objective Mortality Indicator", *Canadian Journal of Public Health*, Vol. 42, Sept. 1951, pp. 375-379.

³ To Canada's 1956 population.

TABLE 5-1 MORTALITY IN CANADA, 1931-1960

Year	(1)	(2)	(3)	(4)
	Number of Deaths*	Crude Death Rate*	Standardized Death Rate*	Age-proportional Death Rate†
1931.....	108,446	10.2	12.2	20.8
1932.....	108,161	10.0	12.1	20.3
1933.....	105,603	9.7	11.6	19.4
1934.....	105,277	9.5	11.4	18.9
1935.....	109,724	9.9	11.6	19.2
1936.....	111,111	9.9	11.5	20.3
1937.....	118,019	10.4	12.1	20.4
1938.....	110,647	9.7	11.1	18.3
1939.....	112,729	9.7	11.1	18.4
1940.....	114,717	9.8	11.0	18.2
1941.....	118,797	10.1	11.2	18.6
1942.....	117,110	9.8	10.7	17.7
1943.....	122,640	10.1	11.0	18.3
1944.....	120,393	9.8	10.5	17.4
1945.....	117,325	9.5	9.3	16.4
1946.....	118,785	9.4	9.9	16.2
1947.....	121,503	9.4	9.7	15.7
1948.....	122,974	9.3	9.5	15.2
1949.....	124,567	9.3	9.4	14.9
1950.....	124,220	9.1	9.1	14.5
1951.....	125,823	9.0	9.0	14.3
1952.....	126,385	8.7	8.8	13.9
1953.....	127,791	8.6	8.6	13.7
1954.....	124,855	8.2	8.2	13.0
1955.....	128,476	8.2	8.2	13.0
1956.....	131,961	8.2	8.2	13.4
1957.....	136,579	8.2	8.3	13.0
1958.....	135,201	7.9	8.0	12.7
1959.....	139,913	8.0	8.1	12.8
1960.....	139,693	7.8	7.9	12.6
1961‡.....	140,985	7.7	—	—

* Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, pp. 30 and 115.

† Calculations based on the above; for methods, see: Kohn, R., "An Objective Mortality Indicator", *Canadian Journal of Public Health*, Vol. 42, September 1951, pp. 375-379.

‡ Dominion Bureau of Statistics, *Vital Statistics 1961*, Preliminary Annual Report, Ottawa: Queen's Printer, 1962, p. 4.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 5-2 POPULATION OF CANADA 1961, IF 1926 DEATH RATE HAD PREVAILED
(thousands)

Year	(1) Population (from Col. 7, previous line)	(2) Birth Rate (per 1,000 population)	(3) Computed No. of Births (1) x (2) 1,000	(4) Net Migration	(5) Total (1)+ (3)+(4)	(6) Computed No. of Deaths (1) x 11.4 1,000	(7) Hypothe- tical Population (5)-(6)
1926.....	9,717	24.7	240	29	9,986	111	9,875
1927.....	9,875	24.3	240	55	10,170	113	10,057
1928.....	10,057	24.1	242	69	10,368	115	10,253
1929.....	10,253	23.5	241	72	10,566	117	10,449
1930.....	10,449	23.9	250	47	10,746	119	10,627
1931.....	10,627	23.2	247	35	10,909	121	10,788
1932.....	10,788	22.5	243	1	11,032	123	10,909
1933.....	10,909	21.0	229	1	11,139	124	11,015
1934.....	11,015	20.7	228	-13	11,230	126	11,104
1935.....	11,104	20.5	228	-13	11,319	127	11,192
1936.....	11,192	20.3	227	-10	11,409	128	11,281
1937.....	11,281	20.1	227	-13	11,495	129	11,366
1938.....	11,366	20.7	235	-17	11,584	130	11,454
1939.....	11,454	20.6	236	- 8	11,682	131	11,551
1940.....	11,551	21.6	249	-21	11,779	132	11,647
1941.....	11,647	22.4	261	-17	11,891	133	11,758
1942.....	11,758	23.5	276	-12	12,022	134	11,888
1943.....	11,888	24.2	288	-24	12,152	136	12,016
1944.....	12,016	24.0	288	-20	12,284	137	12,147
1945.....	12,147	24.3	295	-51	12,391	138	12,253
1946.....	12,253	27.2	333	3	12,589	140	12,449
1947.....	12,449	28.9	360	15	12,824	142	12,682
1948.....	12,682	27.3	346	42	13,070	145	12,925
1949.....	12,925	27.3	353	37	13,315	147	13,168
1950.....	13,168	27.1	357	17	13,542	150	13,392
1951.....	13,392	27.2	364	42	13,798	153	13,645
1952.....	13,645	27.9	381	173	14,199	156	14,043
1953.....	14,043	28.1	395	96	14,534	160	14,374
1954.....	14,374	28.5	410	131	14,915	164	14,751
1955.....	14,751	28.2	416	97	15,264	168	15,096
1956.....	15,096	28.0	423	64	15,583	172	15,411
1957.....	15,411	28.3	436	196	16,043	176	15,867
1958.....	15,867	27.6	438	135	16,440	181	16,259
1959.....	16,259	27.5	447	64	16,770	185	16,585
1960.....	16,585	26.9	446	48	17,079	189	16,890
1961.....	16,890	26.1	441	33	17,364	193	17,171

Actual population, 1961..... 18,238,000

Hypothetical population, 1961 (Col. 7)..... 17,171,000

Increase due to mortality decline..... 1,067,000

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

MORTALITY RATE

Year	Male	Female
1930.....	13.5	12.4
1940.....	11.8	10.2
1950.....	10.1	8.1
1960.....	9.3	6.6

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 30.

Mortality exerts a considerable impact in the first year of life; is at its minimum during childhood, adolescence, and young adult ages; and, as may be expected, increases notably in the older ages.

Table 5-3 indicates that infant mortality is only about one-third of what it was in 1930. The rates for the remaining younger age groups which

TABLE 5-3 AGE-SEX SPECIFIC MORTALITY RATES, CANADA, 1960, 1950, 1930

Age	1960		1950		1930	
	M	F	M	F	M	F
Under 1.....	30.8	23.7	46.2	36.5	98.4	79.7
1- 4.....	1.3	1.1	2.2	1.8	7.9	6.9
5- 9.....	0.7	0.4	1.0	0.7	2.6	2.0
10-14.....	0.6	0.3	0.8	0.6	1.7	1.6
15-19.....	1.3	0.5	1.4	0.8	2.8	2.8
20-24.....	1.5	0.6	1.7	1.0	3.7	3.6
25-29.....	1.5	0.7	1.7	1.2	3.7	4.1
30-34.....	1.6	0.9	1.9	1.4	3.7	4.1
35-39.....	2.4	1.5	2.6	2.2	4.6	4.9
40-44.....	3.3	2.1	4.0	3.2	5.8	6.0
45-49.....	6.0	3.5	6.6	4.7	7.7	7.1
50-54.....	9.4	5.4	10.0	6.6	10.8	9.3
55-59.....	15.5	8.1	15.6	10.1	15.7	13.7
60-64.....	24.3	13.3	25.1	16.1	23.2	20.1
65-69.....	35.7	21.7	36.4	26.4	37.4	32.8
70-74.....	55.1	35.6	54.9	42.8	58.0	50.7
75-79.....	83.6	59.6	84.7	69.9	93.2	82.6
80-84.....	131.6	106.3	132.2	115.3	141.3	132.8
85 and over.....	237.8	219.8	222.9	209.1	242.0	233.5

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, pp. 126-129.

were already comparatively low 30 years ago, have been roughly halved during that period. But very little reduction has taken place at the age groups above the mid-forties.¹

Regional differences are reflected in the mortality rates for the provinces shown in Table 5-4. Several provinces reversed their positions in 1960 from what they were in 1959. The areas with the lowest and the highest standardized rate were the same in both years, namely Saskatchewan and the Northwest Territories respectively.

TABLE 5-4 MORTALITY RATES, CANADA AND PROVINCES, 1960

Province	Crude Rate	Standardized Rate*
Newfoundland.....	6.6	7.8
Prince Edward Island.....	9.3	7.2
Nova Scotia.....	8.4	7.6
New Brunswick.....	7.8	7.7
Quebec.....	6.9	9.0
Ontario.....	8.5	8.1
Manitoba.....	8.3	7.4
Saskatchewan.....	7.5	6.7
Alberta.....	6.9	7.4
British Columbia.....	9.2	7.5
Yukon.....	6.9	7.5
Northwest Territories.....	14.2	14.7
CANADA.....	7.8	7.9

* Standardized to Canada 1956 Census population.

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, pp. 115 and 130.

Life Span

The length of the life span is regarded as a particularly useful indicator for the evaluation of general health conditions. The length of life is the direct result of the conditions determining the mortality patterns. Hence what has been said about the reduction and differentials of mortality will correspondingly apply to the changing duration of the life span. To determine how long Canadians live, two measures are available: the average age at death, and the life expectancy at birth.

¹ Fluctuations in the age group "85 and over" may be due to small frequencies and perhaps also to the changing age-composition within that group.

The average age at death indicates the length of life of those dying during the current year. These are people who lived their lives under health conditions existing in the past. They did not benefit fully from recent advances in medical care. The life expectancy at birth, on the other hand, tells us what the life pattern for babies born today is likely to be if the current mortality experience were to prevail throughout their life time. Their actual life span will be different from today's life table values; if mortality continues to be reduced, they will be exposed to those changed conditions throughout the coming decades of their lives.

For the middle aged, the actual expectancy will be somewhere between that of the people who are dying and of those born today. Thus, the average age at death of Canadians today is about 60 years; one might expect then that this would have been the life expectancy at birth 60 years ago but actually it was then only about 50 years.¹

The following tabulation shows the average age at death, that is, the average length of life of the people dying in each year, for selected years. The widening gap between the sexes is as noticeable as it is in the mortality rates.

AVERAGE AGE AT DEATH

Year	Male	Female
1930.....	42.2	43.5
1940.....	52.3	53.7
1950.....	55.6	58.0
1960.....	59.5	62.7

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 119, and communication from Dominion Bureau of Statistics.

These figures are not adjusted to the age structure of the population and it is therefore difficult to say how much of the increase is due to improved health and living conditions, and how much is the result of the changing age composition. For example, the ten-year increase in the average age at death in the nineteen thirties is partly due to the unusual increase of the proportion of people over 50 in the population which, in turn, is partly due to the lower birth rate and the net emigration during that decade. On the other hand, the increase in the average age at death during the nineteen fifties occurred despite

¹ Lacking Canadian figures for the period around 1900, this figure is taken from the U.S. life tables which are fairly close to Canadian experience.

a slightly reduced proportion in the over 50 group. The fact remains, however, that Canadians reaching the end of their lives today have on the average lived almost 20 years longer than their forbears who died 30 years ago.

To illustrate the implications of this extension of the life span, we may look at its effect upon the economically productive life. Assuming that it begins, roughly speaking, at age 15, men dying in 1930 would have spent a working life of about 27 years, women of about 29 years. In 1960, the corresponding working life figures were 45 for men and 48 for women, an increase of about two-thirds over the 30-year period. It must be noted, however, that this is the potential, and not the actual working life span. The latter would be shorter due to the amount of disability before death.

Life tables indicate the life expectancy at various ages, based on the probability of dying or surviving at a given age, this probability being computed from the current mortality pattern. With this pattern prevailing from the time of birth, the life expectancy at birth gives the expected total life span. It has been increasing for Canadians as follows:

LIFE EXPECTANCY AT BIRTH

Year	Male*	Female*
1931.....	60.00	62.10
1941.....	62.96	66.30
1951.....	66.33	70.83
1956.....	67.61	72.92
1961.....	68.35	74.17

* The total for both sexes is sometimes arrived at by taking the unweighted mean of the two sets of figures. This gives a fairly good over-all picture but is not fully representative. For the many uses of the values for the whole population (i.e., both sexes) it would be helpful if these values were incorporated in the life table.

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962; p. 62, and *Canadian Life Tables 1960-1962*, Ottawa: Queen's Printer, 1963. pp. 6 and 8.

Canada and Other Countries

One method of judging the health status of the Canadian people is to compare selected health indicators for Canada and other countries. For an evaluation of the situation in Canada a comparison with countries of similar social and economic structure and standards is necessary. The United States, England and Wales, and some Scandinavian countries are compared in terms

of certain statistics which are generally considered to be indicative of general health conditions. The data refer to the year 1959:

Country	Infant Mortality Rate per 1,000 Live Births	Mortality Rate From all Infective Diseases per 100,000 Popula- tion	Infective Disease Deaths as Per Cent of all Deaths	Maternal Mortality Rate per 100,000 Live Births	Life Expectancy at Birth	Crude General Mortality Rate per 1,000 Popula- tion
Canada.....	28.4	10.8	1.4	54.9	70.3	8.0
U.S.A.....	26.4	12.8	1.4	37.4	69.6	9.4
England and Wales....	22.2	13.7	1.2	38.7	71.0	11.6
Denmark.....	22.5	8.2	0.9	43.3	71.2	9.3
Norway.....	18.7	12.6	1.4	39.7	72.9	8.9
Sweden.....	16.6	10.9	1.2	23.8	72.6	9.5

SOURCE: See Table 5-5.

Canada's record is not as good as that of the five other countries with which it is compared above, in regard to infant and maternal mortality. The rates for Canada, however, are the net total of widely varying provincial rates as shown in the following tabulation for 1959, the year to which the international comparison refers:

Province	Infant Mortality Rate per 1,000 Live Births	Maternal Mortality Rate per 100,000 Live Births
Newfoundland.....	39	81
Prince Edward Island.....	31	Nil
Nova Scotia.....	31	42
New Brunswick.....	33	36
Quebec.....	33	73
Ontario.....	24	46
Manitoba.....	27	61
Saskatchewan.....	26	41
Alberta.....	24	37
British Columbia.....	25	43
Yukon.....	26	Nil
Northwest Territories.....	129	505
CANADA.....	28	55

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1959*, Ottawa: Queen's Printer, 1961, pp. 66, 214 and 215.

Maternal mortality ranged from 36 in New Brunswick to 505 in the Northwest Territories. Infant mortality ranged from a rate of 24 in Ontario and Alberta to 129 in the Northwest Territories.

Infant mortality is at least as much a social problem as it is a medical one. The correlation between high infant mortality and low economic status is illustrated in the following tabulation ranking the provinces¹ according to their infant mortality and per capita personal income, from the best to the worst.

Infant Mortality Rate per 1,000 Population, and Ranking of Provinces, Average 1959-1961			Per Capita Personal Income, Average 1959-1961		
Rank	Province	Rate	Rank	Province	Income \$
1	Ontario.....	23.5	1	Ontario.....	1,807
2	British Columbia.....	24.4	2	British Columbia.....	1,786
3	Alberta.....	25.7	3	Alberta.....	1,570
4	Saskatchewan.....	26.1	4	Manitoba.....	1,520
5	Manitoba.....	27.4	5	Saskatchewan.....	1,338
6	Nova Scotia.....	29.4	6	Quebec.....	1,311
7	New Brunswick.....	29.7	7	Nova Scotia.....	1,163
8	Quebec.....	31.6	8	New Brunswick.....	1,031
9	Prince Edward Island.....	32.0	9	Prince Edward Island.....	961
10	Newfoundland.....	37.5	10	Newfoundland.....	874

SOURCE: Dominion Bureau of Statistics, *Vital Statistics, 1959, 1960, 1961*, and *National Accounts, Income and Expenditure 1961*, Ottawa: Queen's Printer. The rank correlation is statistically highly significant (Kendall's rank correlation coefficient:

$$\tau = 0.87, \text{ and } \frac{S}{\sigma} = 3.5)$$

Thus, in every province or territory, there is less than one maternal death in every hundred live births. The infant deaths in the "developing" areas of Canada amount to a small percentage only of all infant deaths in Canada and, therefore, have very little effect on the national rate. In 1959, not one of the provinces had reached the level of the European countries chosen for comparison, but the area from Ontario to the West Coast had rates similar to that of the United States.

Summary

The comparison with countries of similar socio-economic structure shows areas requiring improvement in the health status of the Canadian

¹ The situation in the Yukon and the Northwest Territories is discussed at the end of this chapter.

TABLE 5-5 SELECTED HEALTH STATISTICS FOR CANADA AND
OTHER COUNTRIES,* ABOUT 1959

Country	Crude Mortality Rate per 1,000 Population	Infant Mortality Rate per 1,000 Live Births	Infant Deaths as Per Cent of all Deaths	Maternal Mortality Rate per 100,000 Live Births	Infectious Disease Mortality Rate per 100,000
AFRICA					
Egypt.....	16.6	145.0	34.3	—	66.3
AMERICA					
Argentina.....	8.8	61.8	16.3	—	—
Canada.....	8.0	28.4	9.7	54.9	10.8
Chile.....	12.5	119.7	33.9	—	—
Colombia.....	12.8	96.9	33.4	—	—
Jamaica.....	10.0	67.8	26.3	—	—
Trinidad.....	9.1	62.2	25.4	—	—
U.S.A.....	9.4	26.4	6.8	37.4	12.8
Venezuela.....	9.2	55.3	31.6	130.1	67.4
ASIA					
India.....	12.1	100.0	20.6	—	—
Japan.....	7.5	33.7	7.9	146.4	49.1
EUROPE					
Austria.....	12.5	39.8	5.6	97.3	33.2
Belgium.....	11.4	30.4	4.6	51.2	23.9
Denmark.....	9.3	22.5	3.9	43.3	8.2
England and Wales.....	11.6	22.2	3.1	38.7	13.7
Finland.....	8.8	23.6	5.1	67.3	36.2
France.....	11.3	29.5	4.8	55.0	32.6
Hungary.....	10.4	52.4	7.6	80.0	41.8
Italy.....	9.3	45.4	9.0	108.9	29.7
Luxembourg.....	11.1	37.3	5.2	—	16.8
Netherlands.....	7.6	16.8	4.7	50.0	9.1
Norway.....	8.9	18.7	3.7	39.7	12.6
Poland.....	8.6	71.9	20.6	—	—
Portugal.....	10.8	88.6	19.3	123.4	74.5
Spain.....	9.0	47.1	11.4	—	40.7
Sweden.....	9.5	16.6	2.5	23.8	10.9
Switzerland.....	9.6	22.2	4.1	66.7	23.0
West Germany.....	10.8	34.3	5.2	108.4	22.4
OCEANIA					
Australia.....	8.9	21.5	5.5	45.8	10.9
New Zealand.....	9.0	23.9	7.0	49.3	10.5
U.S.S.R.	7.6	40.6	—	—	—

TABLE 5-5 SELECTED HEALTH STATISTICS FOR CANADA AND OTHER COUNTRIES,* ABOUT 1959—*Concluded*

Country	Infective Disease Deaths as Per Cent Of All Deaths	Mortality Rate Age 1-4 per 1,000 Population	Life Expectancy at Birth	Population per Physician	Population per Hospital Bed
AFRICA					
Egypt.....	3.5	50.8	—	2,700	480
AMERICA					
Argentina.....	—	—	—	730	160
Canada.....	1.4	1.2	70.3	920	90
Chile.....	—	—	—	1,700	260
Colombia.....	10.9	18.3	—	2,500	330
Jamaica.....	—	—	—	4,300	240†
Trinidad.....	5.1	3.2	61.5	2,600	240‡
U.S.A.....	1.4	1.1	69.6	790	110
Venezuela.....	7.3	8.8	—	1,400	290
ASIA					
India.....	—	—	—	5,200	2,000
Japan.....	6.6	2.8	67.6	930	120
EUROPE					
Austria.....	2.7	1.7	64.4	620	110
Belgium.....	2.1	1.3	64.7	800	130
Denmark.....	0.9	1.0	71.2	830	110
England and Wales.....	1.2	0.9	71.0	960	110
Finland.....	4.1	1.4	—	1,600	110
France.....	2.9	1.4	68.1	950	110
Hungary.....	3.9	1.7	67.2	650	150
Italy.....	3.3	2.2	67.9	620	110
Luxembourg.....	—	1.2	63.7	910	100
Netherlands.....	1.2	1.3	72.5	900	130
Norway.....	1.4	1.0	72.9	900	110
Poland.....	7.4	—	65.9	1,100	150
Portugal.....	6.8	9.4	62.4	1,300	190
Spain.....	—	—	—	1,000	310
Sweden.....	1.2	0.9	72.6	1,100	90
Switzerland.....	2.4	1.3	68.6	740	80
West Germany.....	2.0	1.4	69.2	730	100
OCEANIA					
Australia.....	1.2	1.2	69.9	860	90
New Zealand.....	1.5	1.2	70.4	700	90
U.S.S.R.	—	—	67.5	550†	130

* Compilation based on World Health Organization *Annual Epidemiological and Vital Statistics* 1959, Geneva, 1962, passim and United Nations *Demographic Yearbook* 1960, New York, 1961, passim.

† 310 if "feldschers" counted.

‡ West Indies Federation.

NOTE: Some of the differences apparent in the table may be due to variations in report years (life expectancy figures in particular range from 1951 to 1959); differences in the quality of the underlying data, or differences between preliminary figures reported to the United Nations and the final national figures.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

people. Canada's main problem appears to be infant mortality and this can be traced to the situation in certain provinces and regions, that in the Northwest Territories being particularly distressing. Here the infant mortality is at a level found only in some parts of Africa, South America, and certain of the smaller islands in the West Indies. Only because of the comparatively small population in the Northwest Territories is the rate prevalent there but little reflected in the national rate.

While, on the whole, the figures for Canada are not too far out of line with those of other countries with a similar social structure, the wide gulf between these advanced countries and many of the developing ones should be noted.¹ In the former, the deaths among infants represent about five to ten per cent of all deaths, whereas in the latter we find infant deaths amounting to as much as one-quarter to one-half of all deaths. Similarly, Canada's death rate from infectious diseases like that of most other western nations is only a fraction of that found in many countries of Asia, Africa, Central and South America, and even in some countries in Europe; a reminder that in other parts of the world tens of thousands of people are still dying every year from such diseases as cholera, smallpox, plague, malaria, and other epidemic diseases which in Canada are a thing of the past.

At the beginning of this chapter we emphasized that there are no means of measuring health as such by some absolute gauge. The available indicators permit at best a relative judgment. The declining mortality rates and increasing life span can probably be taken as indications of a better standard of health than existed in previous decades; an international comparison suggests that despite inadequacies in some health fields, Canada's experience is not too far from that prevailing in other countries with similar socio-economic levels and is much better than that of many other parts of the world.²

MAIN HEALTH PROBLEMS

In the foregoing section an over-all appraisal of health and ill-health was attempted based on the record of mortality. This general picture, it must be remembered, is the aggregate of many components which are not homogeneous and exert their influence in different ways. The declining death rate, for instance, does not mean that mortality from any specific cause has

¹ See Table 5-5.

² In connection with Canada's favourable position relative to the large areas of the world, see Chapter 2, Recommendation 145.

declined or that mortality from all causes has declined at the same rate. Rather it is the net result of rates from individual causes some of which are increasing while others decline or remain more or less constant. Therefore, to interpret changes and differences in such general indicators as those presented, one must review the various specific factors which produce them. Evaluation of these factors will permit a clearer identification and assessment of the broad health problems.

Only some of the preventive health measures, such as health education, nutrition, sanitation, or routine examinations, are aimed at preserving health. Other preventive measures, immunizations for example, are directed towards certain diseases. The same is true of the wide range of diagnostic and treatment services which are set in motion to deal with specific types of illness. Therefore, the type and frequency of such illnesses basically determine the demand for health services and indicate the areas where we face health problems.

Health problems may be classified in terms of any of several criteria:

- (a) the medical causes such as a disease, or a group of diseases with certain common characteristics; this is the classification that will be chiefly used in the following analysis;
- (b) specific groups of the population, such as age groups, people living in certain areas, or people sharing some common environment.

In this chapter the manifestations of ill-health will be categorized under two broad headings: 1) those affecting the individual (and indirectly also those around him), like discomfort, pain, disability, death; and 2) those giving rise to a need or demand for health services, such as calling a physician, being admitted to a hospital, or using other services. The economic effect of illness in terms of reduced earning power is discussed in Chapter 12.

We turn now to a brief assessment of the major groups of diseases and injuries. In choosing these groups and the order in which they are discussed we follow the International Classification of Diseases¹ developed by the World Health Organization.

In reviewing the health status of the Canadian people, our objective is the general evaluation of the trends for broad groups of diseases, their social and economic impact in terms of illness and their consequences (mortality, duration of illness) and their demand on selected types of health services.

Following is a summary of our observations regarding the various disease groups. More detailed discussions will be found in the subsequent parts

¹ 1955 Revision.

of this chapter. No attempt is made in this summary to rank the various health problems because this would vary according to the criteria by which to measure the importance; we rather follow here, as in the following presentation, the sequence of the International Classification of Diseases.

Summary

With the successful control of the major infective diseases, including tuberculosis, and the reduction in the mortality from others, this group has lost much of its former significance. To maintain this situation, however, continued adequate public health services must be maintained. Venereal diseases and infectious hepatitis remain unsolved and even growing problems, together with the still not fully understood complex of the virus diseases.

Cancer remains an unsolved problem although statistics indicate that early diagnosis and treatment may be successful in the treatment of cancer of certain sites.

Allergies and diabetes also remain unsolved problems though mortality from diabetes is reduced by the application of drugs.

Some of the anaemias likewise can be controlled and the fatal aspects reduced by continuous treatment.

The trend of psychiatric disorders is difficult to evaluate because of the lack of adequate data on their incidence and prevalence. The large volume of hospitalization demanded by these conditions and the continuing increase in the admission rate are disquieting factors.

Diseases of the nervous system show higher mortality and greater frequency of hospitalization than ten years ago although in recent years the trend appears to be levelling off.

Circulatory diseases, like cancer and diseases of the nervous system, most frequent among the older age groups, continue with high (the highest of the groups shown) mortality and hospitalization rates.

The diseases of the respiratory system display little change over the last decade, but the trend is sensitive to the incidence of epidemic varieties such as influenza.

Diseases of the digestive system also have changed little from their level in 1951.

The diseases of the genito-urinary system and conditions related to maternity share the substantial decline in their mortality with little change in their demand for hospitalization.

Skin diseases as well as rheumatism and arthritis and the other diseases in this group have shown little change.

Congenital malformations and certain diseases of early infancy share a record of declining mortality but the number of cases brought to treatment in hospitals has increased sharply.

Accidents, by and large, remain a problem both in terms of mortality and hospitalization despite the many programmes designed to reduce accidents in the home, on the road, and elsewhere.

In brief, then, we have been successful in controlling the most deadly communicable diseases including tuberculosis.¹ The chronic diseases—cancer, heart disease, psychiatric disorders, diseases of the nervous system and diabetes²—have shown little or no improvement and in many instances increases, as have accidents, allergies, arthritis, and the often minor but frequent diseases of the respiratory and digestive systems.

The problems of the handicapped assume new significance with more effective rehabilitation procedures available.

Little is known of the trend of dental disease but its present extent is very considerable.

Disease Groups

INFECTIVE AND PARASITIC DISEASES

The Successes—By successfully controlling the infective and parasitic diseases we have reduced the mortality in the lower age groups, thus extending the average life span and exposing more and more people to the chronic and degenerative diseases peculiar to the aged. New concepts of the scope and the extent of yet unrecognized viruses may bring about a change in the assessment of these diseases.

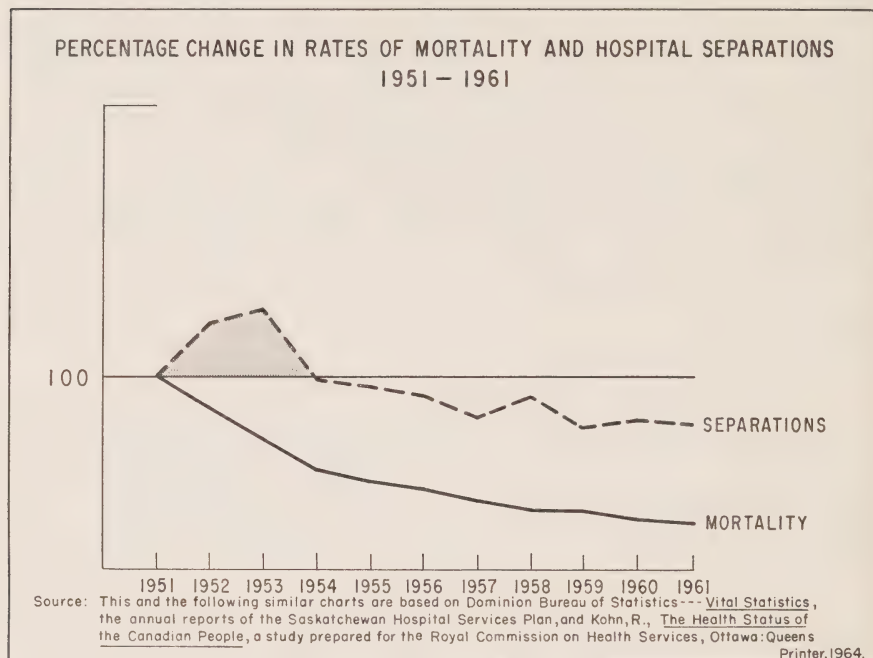
The main diseases included in this group are tuberculosis, and all other communicable diseases with the exception of influenza and the common cold, which the Classification combined with the diseases of the respiratory system. If this group of diseases appears to be given a disproportionate amount of space in this chapter, it is because it is probably the most heterogeneous of the 17 classes of the International Classification, with individual diseases requiring entirely different measures for their control.

The following chart demonstrates the reduction which has taken place over a recent ten-year period in the mortality from infective and parasitic diseases. It also indicates that separations from hospitals, after following an upward trend for the first few years, declined somewhat; this decline did not follow the extent of decline in mortality but showed signs of

¹ Poliomyelitis and influenza are the causes of more recent outbreaks of epidemic proportions accompanied by substantially increased mortality. Poliomyelitis still caused 494 deaths in 1953 (11 in 1961). No accurate figures are available on the deaths caused by the influenza epidemic following World War I but data supplied by the Dominion Bureau of Statistics point to an excess number of deaths of the order of about 25,000 annually during the period from 1918 to 1920. In 1959, the Asian influenza epidemic resulted in an excess of about 600 deaths from influenza during that year.

² See p. 176.

levelling-off in recent years. This is one example for our previous statement that a decline in mortality does not necessarily entail a corresponding decline in the demand for health services.



1. *Rare Diseases*

Anthrax, botulism, cholera, leprosy, malaria, plague, psittacosis, and ornithosis, rabies in man, relapsing fever, rickettsial disease (typhus, etc.), smallpox, tetanus, trichinosis, tularaemia, and yellow fever are referred to as "rare diseases" in the official weekly reports of these diseases. Some of them were once rampant in Canada and still are in large parts of the world. In the year 1924, for instance, there were 2,769 cases of smallpox reported in Canada which resulted in 64 deaths. Nobody has died from this disease in Canada since 1940 and since 1947 only one case has been reported (in 1962) which was brought to Canada from abroad. This example leads to the following observations regarding this group of diseases:

- (a) they are rare, i.e., not significant numerically, although some are serious enough that even a single case may constitute a

major health problem (note, for example, the precautions taken in the case of a suspected case of smallpox);

- (b) though rare, there are sufficient cases to indicate that "it can happen here" if the vigilance of the public health authorities is relaxed;
- (c) they demonstrate the success of systematic control measures.

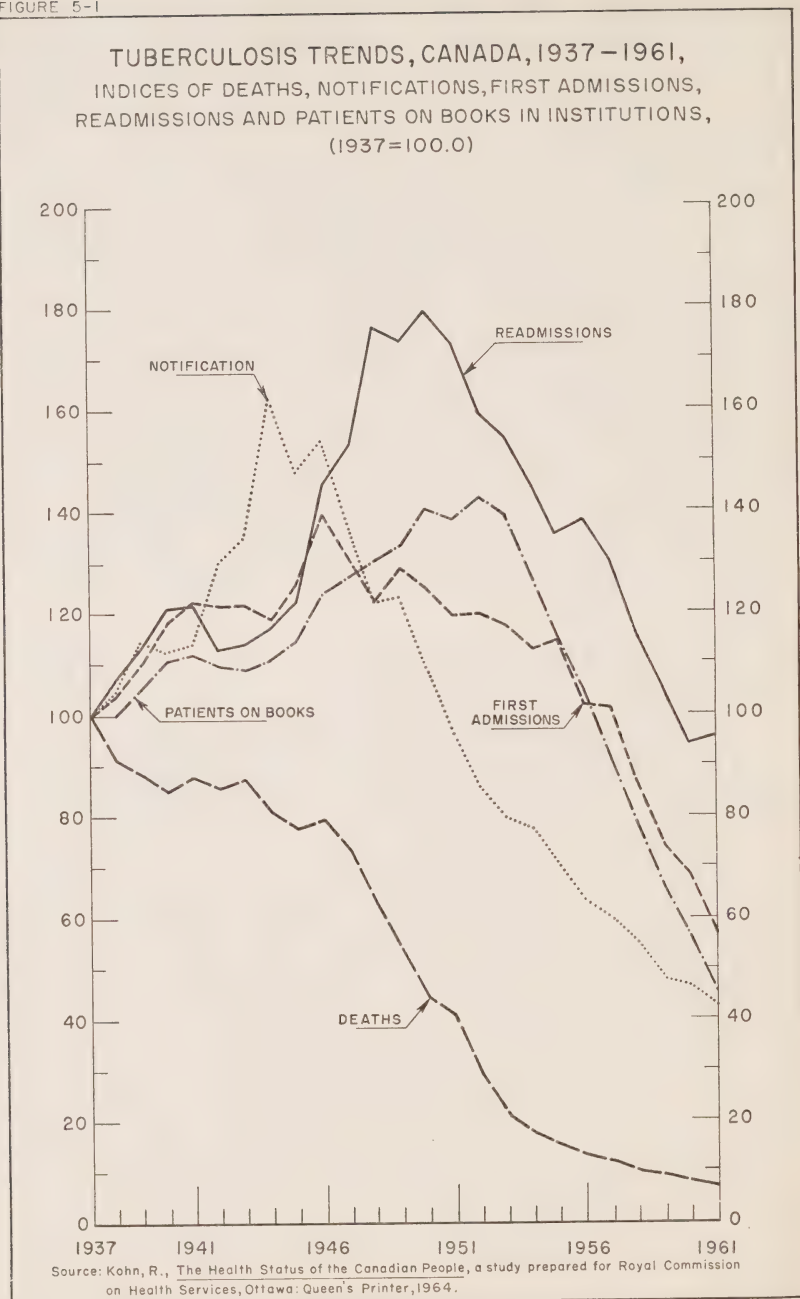
This group of diseases, insignificant as it now is in terms of the number of cases and deaths, and the volume of care they require, nevertheless constitutes a significant health problem because of the preventive measures needed and because of the treatment facilities required if unusual outbreaks do occur. Even diseases which have been non-existent in Canada for many decades present a potential health problem here as long as they exist anywhere in the world. In this age of easy and speedy travel, with more and more Canadians going abroad and people from other countries coming to Canada, quarantine and other public health measures become increasingly important even for conditions which are effectively controlled here.

2. *Tuberculosis*¹

Considerable progress has been made towards the control of tuberculosis which has lost much of its former dreaded role as one of the major health problems in the community. This may be ascribed to a variety of factors including improved case-finding and compulsory treatment, paid for largely out of public funds, more effective treatment methods, and improved living standards. Figure 5-1 compares the index of the decline of mortality with that of the notification of newly discovered cases, and the movement of patients in institutions. The spectacular decline in the death rate from 24.8 per 100,000 population in 1951 to 4.2 in 1961 is not entirely matched by the decline in the indicators of the incidence (the number of new cases). The index of readmissions to hospitals took a sharp upward turn when the indices of death, infections, and first admissions declined. The readmission index in 1961 stood at a point considerably below its 1951 level with a possible upward trend since then. This is one dark spot in the otherwise bright picture of tuberculosis indicating that there are difficulties in ensuring the follow-through in modern drug treatment, and that the reservoir of tuberculosis in the community

¹ See also Wherrett, G. J., *Tuberculosis in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

FIGURE 5-1



has changed but little over the last ten years. Where records have been kept of the number of active or inactive cases, they show little or no decline in the total number of cases under observation.¹ All these cases still require follow-up procedures.

3. Poliomyelitis

Poliomyelitis, like most infective diseases, differs from tuberculosis in that the latter on the whole varies gradually and fairly steadily in its level of incidence and its endemic level (i.e., the amount of the disease usually present in the community). Diseases like poliomyelitis are characterised by periods of occasional epidemic flare-ups or seasonal variations. The assumption is that in the case of poliomyelitis the smaller number of cases and deaths reported in recent years are due to the effectiveness of the vaccination programme which is expected to prevent major outbreaks in the future. But, the increases in the number of persons contracting this disease in 1959 and 1960 emphasize the need for caution before the disease can be considered to be effectively controlled.

TABLE 5-6 POLIOMYELITIS

Cases and Deaths, 1951-1961

Year	Cases	Deaths
1951.....	1,248	162
1952.....	1,595	311
1953.....	3,912	494
1954.....	1,456	157
1955.....	584	36
1956.....	404	51
1957.....	185	26
1958.....	249	26
1959.....	1,887	182
1960.....	909	83
1961.....	189	11

SOURCE: Dominion Bureau of Statistics, *Annual Report of Notifiable Diseases 1961*, p. 19, and *Causes of Death, Canada, 1950-1960*, p. 6, Ottawa: Queen's Printer, 1962.

¹For example, in British Columbia the total known cases (active and inactive) of tuberculosis stood at 15,807 in 1953, and at 16,291 in 1962, with the maximum of 17,995 cases reached in 1958. (Data are preliminary.)

4. Diphtheria

The effects of immunization against diphtheria have been evident for many years, but unnecessary cases and deaths still occur which could be avoided by the universal application of immunization.

TABLE 5-7 DIPHtheria

Cases and Deaths, 1942-1961

Year	Cases	Deaths
1942.....	2,955	256
1943.....	2,804	287
1944.....	3,223	309
1945.....	2,786	271
1946.....	2,535	227
1947.....	1,550	140
1948.....	898	86
1949.....	806	84
1950.....	421	52
1951.....	253	37
1952.....	190	26
1953.....	132	15
1954.....	208	18
1955.....	139	15
1956.....	135	8
1957.....	142	20
1958.....	66	7
1959.....	37	—
1960.....	53	7
1961.....	93	5

SOURCE: Dominion Bureau of Statistics, *Summary of Notifiable Diseases, 1924-1952*; *Causes of Death, Canada, 1950-60*; *Vital Statistics 1961, Preliminary Annual Report*, and *Canada Year Book, 1955 to 1961*, Ottawa: Queen's Printer, 1954 and 1962.

5. Whooping Cough (*Pertussis*)

Though the reliability of diagnosis as well as the efficacy of the vaccine may be lower in the case of whooping cough than they are for diphtheria, a similar situation prevails: immunization has reduced the problem but it still continues to cause a number of deaths every year.

TABLE 5-8 PERTUSSIS

Cases and Deaths, 1952-1961

Year	Cases	Deaths
1952.....	8,520	148
1953.....	9,387	134
1954.....	11,600	96
1955.....	13,683	137
1956.....	8,513	118
1957.....	7,459	63
1958.....	6,932	40
1959.....	7,259	46
1960.....	5,992	71
1961.....	5,478	36

SOURCE: Dominion Bureau of Statistics, *Annual Report of Notifiable Diseases, 1961*; *Causes of Death, Canada 1950-60*; *Vital Statistics 1961, Preliminary Annual Report*, Ottawa: Queen's Printer, 1964.

Remaining Problems, Old and New—While many of the former scourges among the infective and parasitic diseases have been curbed, there seems to be some truth in William Farr's claim that when one weed in the garden is controlled, others will take its place. The successes of "sulfa drugs" and antibiotics are sometimes followed by resistance to these drugs. New forms of staphylococci and viruses develop or are being discovered, and the impact of the viruses is still not fully known.

Some of the older diseases still rise occasionally above the endemic level. In assessing the data, one has to remember that the statistics for Canada as a whole are apt to obscure the seriousness of some local occurrences: for instance, 20 cases of a disease during the year may be few in relation to the population and size of the country but if the 20 cases occur in one locality, they may represent a very serious outbreak.

Noteworthy among the diseases in this problem group, besides those already mentioned, are the venereal diseases which are a continuing problem and infectious hepatitis which is a growing and perplexing public health threat.

1. Venereal Diseases

The venereal diseases are a group where the means of prevention as well as cure are known and available, and yet these diseases continue to be a problem not because of the lack of medical knowledge or adequate health services but because of social conditions whose remedy seems to lie entirely in the field of education. The rising incidence during the last few years has been a cause of great concern to those dealing with the health and social issues involved.

Mortality from syphilis is due to its late effects, and therefore the deaths of today are the result of the new cases of previous years. Because of this time lag it is difficult to establish the relationship of deaths and new cases in the same year. The slowly declining number of deaths, however, may be ascribed to more effective treatment methods which help to keep the mortality down even in the face of an increasing incidence.

TABLE 5-9 VENEREAL DISEASES
Cases, Deaths, and Rates per 100,000 Population, 1952-1961

Year	Primary Syphilis		Gonorrhoea		Deaths from Syphilis and Sequelae	
	Cases	Rates	Cases	Rates	Number	Rates
1952.....	347	2.4	14,411	99.7	297	2.1
1953.....	202	1.4	15,496	104.4	283	1.9
1954.....	157	1.0	15,472	101.2	179	1.2
1955.....	131	0.8	14,295	91.1	187	1.2
1956.....	116	0.7	14,545	90.4	209	1.3
1957.....	146	0.9	14,312	86.2	190	1.1
1958.....	123	0.7	15,037	88.0	177	1.0
1959.....	226	1.3	14,821	84.8	167	1.0
1960.....	266	1.5	15,659	87.6	172	1.0
1961.....	133	1.8	16,451	90.2	160	0.9

Based on Dominion Bureau of Statistics, *Annual Report of Notifiable Diseases, 1961; Causes of Death, Canada, 1950-60; Vital Statistics 1961, Preliminary Annual Report*, Ottawa: Queen's Printer, 1962.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

2. Infectious Hepatitis

The following table, showing the number of cases reported each year, illustrates the growing seriousness of the problem.

TABLE 5-10 INFECTIOUS HEPATITIS

Cases Reported, and Rates per 100,000 Population, 1952-1961

Year	Cases	Rates
1952.....	2,392	16.5
1953.....	3,268	22.0
1954.....	4,567	29.9
1955.....	3,885	24.7
1956.....	2,937	18.3
1957.....	3,006	18.1
1958.....	4,515	26.4
1959.....	4,728	27.0
1960.....	6,314	35.3
1961.....	12,237	67.1

Based on Dominion Bureau of Statistics, *Infectious Hepatitis, 1961*, Ottawa: Queen's Printer, March 1962.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

3. Chickenpox, Measles, Mumps, German Measles (Rubella)

Physicians are no longer required to notify health authorities about the incidence of these diseases because they no longer constitute a public health problem, and also because the reporting had been so incomplete that the resulting statistics were useless. The four diseases, often referred to as the minor childhood diseases, are thus considered to be part of the growing-up process. There is no adequate method of prevention, and quarantine is not enforced. Among children the cases are usually light and recovery is quick but in later life, in some cases particularly during pregnancy, these diseases may cause severe illness or complications.

Yet, there are still deaths from measles, due mostly to complicating pneumonia, and there are also some deaths even from the usually harmless chickenpox, mumps, and German measles.

Although these diseases may be considered a less severe type of health impairment rather than an important public health problem, they account for a sizeable proportion of illness among children and of their health care.

According to the Canadian Sickness Survey, 1950-51,¹ these four diseases were responsible for some 11 million days of disability corresponding

¹ Department of National Health and Welfare and Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Canadian Sickness Survey, 1950-51, Ottawa: Queen's Printer, 1960.

TABLE 5-11 MEASLES, CHICKENPOX, MUMPS, GERMAN MEASLES

Deaths, 1952-1961

	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Measles.....	256	140	120	179	177	108	93	84	53	96
without mention										
of pneumonia.....	87	62	40	56	72	46	34	41	19	—
with pneumonia.....	168	78	79	118	102	60	59	43	34	—
late effects.....	1	—	1	5	3	2	—	—	—	—
Chickenpox.....	25	22	15	13	19	29	35	17	29	26
Mumps.....	11	8	10	7	10	9	4	4	5	5
German Measles.....	2	—	1	3	5	3	2	—	—	—

SOURCE: Dominion Bureau of Statistics, *Causes of Death, 1950-1960*, p. 7, and *Vital Statistics 1961, Preliminary Annual Report*, p. 6, Ottawa: Queen's Printer, 1962, and communication from Dominion Bureau of Statistics.

to some 16 million days of disability in the larger population in 1961. This is about seven per cent of all disability reported in the Survey and 63 per cent of the disability due to the entire group of infectious and parasitic diseases. It amounts to about one-quarter of disability from all causes among children under 15, and to about one-tenth of all school absenteeism from Grade I to Grade XIII.¹

The successful gradual control of such diseases as smallpox, diphtheria, tuberculosis, poliomyelitis, and whooping cough has reduced this group of diseases from its position as the outstanding health problem to one taking second place to the chronic diseases and accidents. This development has brought about an extension of public health methods which originated as a defence against the epidemics of old. This defence, however, still has to be maintained. The venereal diseases thought to be controlled after the intensive campaigns during and after the last war, show signs of some resurgence though their fatality has been reduced. Infectious hepatitis is an increasing problem as is the wide and largely uncharted field of viruses in general. Thus, the infective diseases are far from being eliminated as a serious health problem.

What we have achieved, however, is control of the most fatal of these diseases. Their fatal effect has been reduced to the extent that they no longer exact the toll in human lives that they did when epidemics laid waste the cities and towns of Europe, and more recently when tuberculosis, and the other communicable diseases were among the leading causes of death. The success achieved should not be allowed to obscure the fact that the control measures

¹ The National Committee for School Health Research, *Absenteeism in Canadian Schools*, Report No. 3, Toronto, 1948.

must be continued, and intensified in some instances, if we are to continue to combat these diseases effectively in the future.

Infective and Parasitic Diseases in Canada and Selected Other Countries—The death rate per 100,000 population from these diseases in 1959 shows that Canada compares favourably with certain other countries selected for this comparison:¹

Canada	10.8
United States	12.8
England and Wales	13.7
France	32.6
Sweden	10.9
Mexico	171.1
Ceylon	73.8

Tuberculosis is among the diseases causing the higher rates in countries with a comparable standard of living and health services.² Compared with some of the developing countries, Canada's low rate is due to her effective control of environmental hazards favouring the spread of communicable diseases, and to some extent to the climate which is not conducive to the vectors of some of the diseases which are causing the high rates in Mexico and Ceylon.

Infective and Parasitic Diseases and Their Share of the Total of All Illness and Health Care—Mortality from these diseases—whether measured in absolute numbers or in terms of the age at death—has been reduced to a point where they account for less than two per cent of the mortality from all causes. They now rank eleventh in terms of the number of deaths and ninth in regard to life years lost, a far cry from the second place (after the diseases of the circulatory system) they occupied in 1924.

Nevertheless, this group ranks third as a cause of disability and hospitalization, the latter due largely to the need for hospitalization by tuberculosis patients. While it ranks only ninth in terms of the demand for physicians' services (accounting for 5.4 per cent of the total), this group of diseases requires for its continuing control a substantial part of the preventive and other public health services such as quarantine, case finding and follow-up.

¹ Here and in similar comparisons in subsequent sections the United States, England and Wales, France, and Sweden were selected as countries with similar socio-economic conditions. Mexico and Ceylon are added as examples of developing countries, for which data are available, the former as a country in the Americas, the latter as an Asian country.

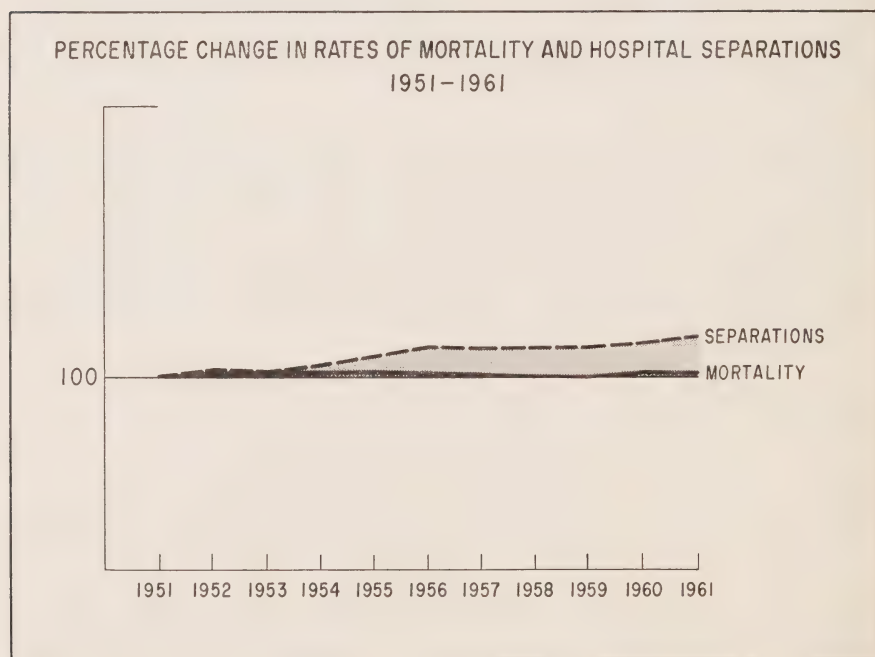
² The death rate from tuberculosis was as follows in 1959: Canada 5.5, United States 6.5, England and Wales 8.5, France 23.2, Sweden 7.2. Based on World Health Organization, *op. cit.*, pp. 288-290.

This group accounted for the following percentages of total illness and demand for selected health services:¹

	Per Cent
All deaths	1.2
Premature mortality	1.8
Disabling illness	9.5
Non-disabling illness	3.0
Hospital separations	1.5
Hospital days	6.1
Physicians' services	5.4
Prescriptions	0.5
Home nursing	1.8

NEOPLASMS

This group of diseases includes the malignant neoplasms, i.e., cancer, and the benign neoplasms (including non-malignant tumours, cysts, etc.) and those neoplasms which are unspecified as to their nature.



¹ See Table 5-15.

The above chart shows that illness from these diseases as reflected in the number of hospital cases (separations) has been increasing slightly but steadily, and that the mortality rate has remained at almost exactly the same level throughout. The malignant neoplasms, as the name implies, are the deadly ones in this class. Less than two per cent of the deaths are ascribed to what would appear to be complications of normally benign neoplasms.

The death rate from benign neoplasms has remained low and fairly constant with a small decline during the most recent years. On the other hand, they account for about one-half of the hospital cases in this class. Their rate of hospitalization has remained fairly constant. The increase in the rate of hospitalization for all neoplasms is thus due to the malignant ones.

BENIGN NEOPLASMS

Year	Death Rate per 100,000 Population*	Hospital Separations per 100,000 Population†
1951.....	2.2	420
1952.....	2.6	457
1953.....	2.7	438
1954.....	2.4	449
1955.....	2.3	457
1956.....	2.2	473
1957.....	2.1	458
1958.....	1.7	453
1959.....	1.9	440
1960.....	1.7	430
1961.....	1.7	450

* Dominion Bureau of Statistics, *annual reports of Vital Statistics*.

† Saskatchewan Hospital Services Plan, *annual reports*.

Cancer—(Malignant Neoplasms)—There are few diseases of which we know so little, whether it be their prevention or their cure, as we do of cancer.

The mortality rates shown for all forms of cancer hide different and even diverging trends as shown by malignancies of specific sites and among specific groups of people.¹

During the period from 1951 to 1961 the mortality rate from all malignant neoplasms changed but little. In 1951, it stood at 127.3 per 100,000 population and after some minor fluctuations rose to 129.7 in 1961, a percentage increase of 1.9. The rate of hospital separations, on the other hand, rose from 418 to 560 during the same period, a percentage change of 34.0.

A comparison with selected other countries shows the Canadian mortality to be lower than that of England and Wales, France, Sweden, and the United States, but very substantially higher than that of Mexico and Ceylon. These are crude rates, however, which have not been adjusted for the different age composition of the populations of these countries.

While the total mortality rate displays very little change over the years, the effects of the disease are becoming quite different between the two sexes. After adjustment for the age composition, we find that a significant increase has been taking place in male mortality and a significant decrease in female mortality.² The percentage distribution by site of cancer mortality in each sex will further illustrate the sex difference (data relate to 1961):

Male	Per Cent	Female	Per Cent
All Cancer.....	100.0	All Cancer.....	100.0
Digestive Organs and Peritoneum.....	40.2	Breast and Genito-urinary Organs..	41.0
Respiratory System.....	19.7	Digestive Organs and Peritoneum....	37.1
Breast and Genito-urinary Organs....	18.2	Miscellaneous and Unspecified Sites	8.6
Lymphatic and Haematopoietic Tissues.....	14.5	Lymphatic and Haematopoietic Tissues.....	7.9
Miscellaneous and Unspecified Sites..	8.7	Respiratory System.....	4.1
Buccal Cavity and Pharynx.....	3.1	Buccal Cavity and Pharynx.....	1.3

SOURCE: Based on Dominion Bureau of Statistics, *Vital Statistics 1961*, Ottawa: Queen's Printer, 1963.

¹ While we know how many persons die from cancer year by year, regrettably we have no statistics showing how many people suffer from cancer in this country, how many new cases occur or are found, and the trend over a number of years. Cancer shares this deplorable lack of adequate statistics with all our other major health problems, a fact which is difficult to reconcile with the advanced techniques at our disposal for data collection and processing. See Chapter 2, Recommendations 184 and 186-189.

² Phillips, A. J., *Cancer Mortality Trends in Canada—1941 to 1958*, The British Journal of Cancer, 1961, Vol. XV., reprint, p. 8.

Phillips studied the mortality trends for selected sites for the period between 1941 and 1958, based on age-adjusted rates, and found the following statistically significant changes:¹

SIGNIFICANT INCREASES, 1941-1957

Male	Female
Respiratory System (26.3%) Male Genital Organs (14.1%) Urinary Organs (8.8%) Leukaemia (6.8%)	Leukaemia (4.7%)

SIGNIFICANT DECREASES, 1941-1957

Male	Female
Stomach (24.9%) Buccal Cavity and Pharynx (4.3%)	Intestines (17.0%) Uterus (13.2%) Stomach (11.4%)

While both sexes have shown a decrease of cancer of the stomach, the increase of the over-all cancer death rate for males is influenced largely by the substantial increase in the rate for the respiratory system,² and the decrease for females by the falling off in the mortality from cancer of the intestines and the uterus. The latter is ascribed to large-scale cytological screenings with the resulting early detection and diagnosis.

Health agencies as well as the public at large have been much concerned at the continuing rise in the frequency of lung cancer, especially among males. Incriminated as factors in this increase are cigarette smoking, air pollution and exposure to industrial carcinogenic substances.³

All the statistics mentioned relate to the mortality from cancer, the only manifestation of the disease for which we have Canada-wide statistics over a considerable period of time. No comparable data exist on the actual occurrence, i.e., incidence and prevalence of the disease, but data are available from some provincial programmes, such as an incidence study in Mani-

¹ *Ibid.*, p. 3.

² The mortality rate from cancer of the lung (including bronchus and trachea) has risen as follows since 1951:

	1951	1961
Male	15.5	26.2
Female	3.4	4.0

SOURCE: Communication from Dominion Bureau of Statistics.

³ Department of National Health and Welfare, *Smoking and Health*, prepared for the Canadian Conference on Smoking and Health, Ottawa: The Association, 1963, p. 9; see also: J.S. Department of Health, Education, and Welfare, Public Health Service, *Smoking and Health*, Washington, D.C., U.S. Government Printing Office, 1964.

toba¹ from which selected statistics as shown in Table 5-12 illustrate the relationship between incidence and mortality:

TABLE 5-12 CANCER DEATHS AND NEW CASES, MANITOBA 1961-62,
BY SITE AND SEX

(rates per 100,000 population)

Site	Male		Female	
	Deaths	New Cases	Deaths	New Cases
<i>Buccal Cavity and Pharynx</i>	2.3	19.8	1.3	4.6
<i>Digestive Organs and Peritoneum</i>	63.2	83.6	43.7	65.1
Oesophagus and Stomach.....	26.9	31.6	12.8	15.0
Intestines, Rectum, Peritoneum.....	20.9	35.4	17.7	36.2
Liver, Pancreas, Biliary Passages..	15.4	16.6	13.2	13.9
<i>Respiratory System</i>	38.6	41.8	5.1	7.7
<i>Breast and Genito-Urinary</i>	25.4	64.2	41.3	137.9
Breast.....	0.4	0.4	18.5	63.3
Female Genital.....	—	—	19.7	67.1
Male Genital.....	17.3	42.7	—	—
Urinary Organs.....	7.7	21.1	3.1	7.5
<i>Other and Unspecified Organs</i>	14.5	70.8	11.7	61.4
Skin.....	1.7	50.8	1.1	40.8
Eye.....	0.4	1.9	0.2	0.2
Brain and Nervous System.....	5.8	6.6	4.0	6.9
Thyroid and Endocrine Glands.....	0.6	1.7	1.3	2.6
Bones and Connective Tissue.....	1.9	2.6	—	1.6
Other and Unspecified Sites.....	4.1	7.2	5.1	9.3
<i>Lymphatic and Haematopoietic System</i>	18.8	23.3	9.9	13.9
Hodgkin's Disease.....	1.9	3.2	0.4	1.6
Other Lymphomas.....	5.3	4.7	2.4	2.4
Multiple Myeloma.....	4.1	4.3	2.7	2.6
Leukaemia and Aleukaemia.....	7.5	10.2	4.0	6.4
Polycythaemia Vera.....	—	0.9	0.4	0.9
ALL SITES.....	162.8	303.7	113.0	290.6

SOURCE: Based on The Manitoba Cancer Treatment and Research Foundation, Report April 1, 1961 to March 31, 1962, pp. 66-67 and 99-100.

The table indicates that about twice as many new cases of cancer are found in a year as deaths from the disease. The ratio varies among the different sites but the discrepancy is greatest for cancer of the skin. Further studies will be required, and we stress the necessity of undertaking such investigations to determine to what extent the differences are due either to varying survival

¹ The Manitoba Cancer Treatment and Research Foundation, Report April 1, 1961 to March 31, 1962.

rates or to differences in diagnostic practices, time lag, or other factors. The cancer registries existing or being developed in the provinces should lend themselves to this kind of study recognizing the fact that both incidence (as well as prevalence) and mortality represent different stages or degrees of cancer morbidity. The registries and regular follow-up studies of the existing records should also yield more general and continuous data than now exist on the survival of cancer cases and the epidemiology of the disease.¹

All cancer accounts for 16.8 per cent of all deaths, slightly less (13.7 per cent) of the life years lost due to premature mortality, only 0.9 per cent of all disability days, 3.6 per cent of hospital days, 5.1 per cent of physicians' services, 0.3 per cent of all prescriptions, but 7.0 per cent of home nursing services.

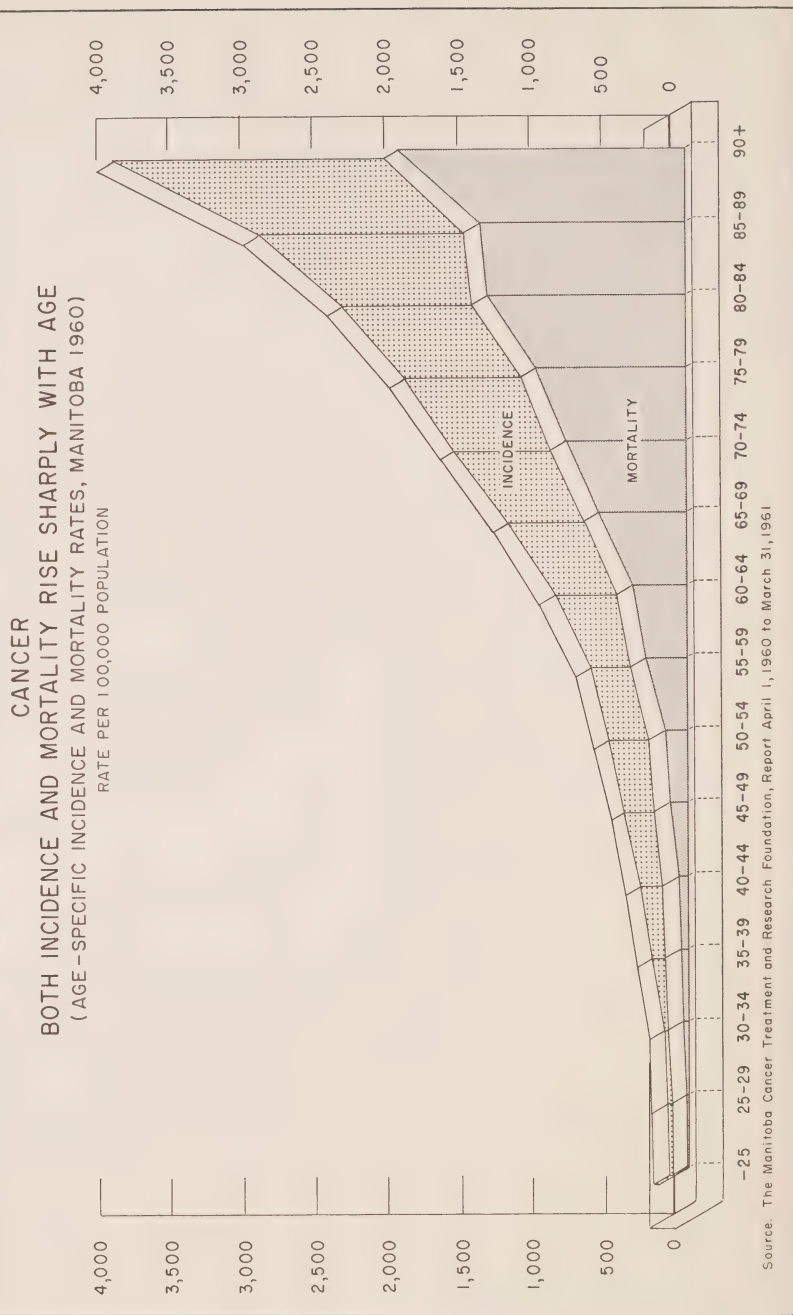
Following are the percentages of total illness and the demand for selected health services accounted for by all forms of cancer and the whole group of neoplasms:²

	All Cancer	All Neoplasms
	Per Cent	Per Cent
All deaths.....	16.8	17.0
Premature mortality.....	13.7	13.7
Disabling illness.....	0.9	2.0
Non-disabling illness.....	n.a.	1.4
Hospital separations.....	2.5	4.5
Hospital days.....	3.6	4.6
Physicians' services.....	5.1	5.8
Prescriptions.....	0.3	0.3
Home nursing.....	7.0	7.3

¹ Such studies would permit the evaluation of therapeutic procedures as well as changing patterns of the disease. A project of this kind was carried out by T. A. Watson in Saskatchewan in his report: *Results of Treatment of Cancer in Saskatchewan 1945-52 (inclusive)*, published in 1958. The Annual Report of The Manitoba Cancer Treatment and Research Foundation April 1, 1961 to March 31, 1962, states on p. 25 in regard to survival studies that "overall five year results will now be required annually as part of the criteria for approval of a Cancer Registry, by the Committee on Cancer of the American College of Surgeons". The difference shown in the existing sources are difficult to assess because of the limited number of cases covered. Cancer is one of the diseases where the knowledge of differentials between various groups of the population and people in various parts of the world has been exploited considerably in efforts to detect leads regarding the causation of the disease. Such projects of international epidemiology require uniformity of methods if the results are to be comparable. Recognizing this fact, the Second World Health Assembly requested action resulting in the creation of a sub-committee (of the Expert Committee on Health Statistics) on the Registration of Cases of Cancer as well as their Statistical Presentation. The report on its first session is contained in World Health Organization *Technical Report*, Series No. 5, Geneva: The Organization, March 1950.

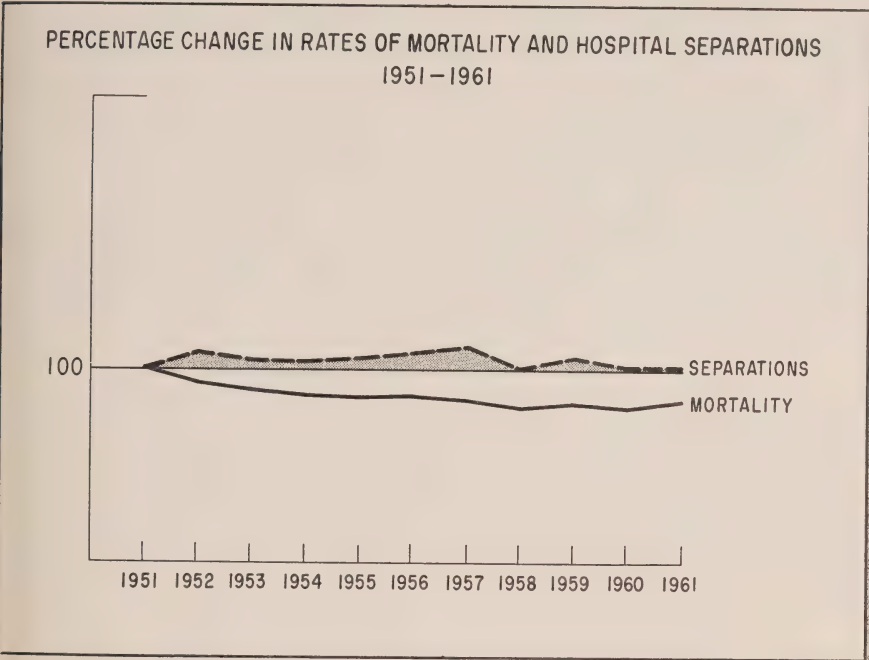
² See Table 5-15.

FIGURE 5-2



ALLERGIC, ENDOCRINE SYSTEM, METABOLIC AND NUTRITIONAL DISEASES

This group of diseases includes the allergic disorders (such as hay fever, and asthma), diabetes, as well as various glandular disorders and nutritional deficiency diseases. This is a heterogeneous group which, as a whole, is characterized by the fairly even trend of mortality and hospitalization over the last decade as indicated in the following chart.



The trend shown above reflects the lack of substantial progress in dealing with the major diseases included here, although the first half of the period saw a decline in mortality of about 16 per cent (from a rate of 20.5 per 100,000 population in 1951 to 17.2 in 1957, the rate reached 19.8 again in 1961). The rate of hospitalization remained around the level of about 600 separations per 100,000 population.

A comparison with selected other countries shows mortality in Canada at about the same level as that of France and Sweden, lower than that of the United States, but substantially higher than that of England and Wales.

The share of these diseases in mortality and disabling illness is inconspicuous: they account for 2.2 per cent of all deaths, somewhat less (1.8 per

cent) of the life years lost due to premature mortality because of deaths occurring generally at advanced ages; 1.3 per cent of all disability days; but 5 per cent of non-disabling illness.

Of similar proportions is their share of hospitalization (2.2 per cent of the cases, and 1.8 per cent of the days) and of physicians' services (2.0 per cent). But this group accounts for 7.0 per cent of all prescriptions and 11.1 per cent of home nursing services.¹

The demand for home nursing and prescriptions, as well as the share of non-disabling illness days is out of proportion to the frequency of these diseases, a fact which is explained by their nature. The allergies, such as hay fever or asthma are characterized in common with diabetes, by their chronicity usually without being fatal, and they also share to a varying extent the need for medication, occasional in some cases, regular in others. Hay fever and asthma account for about one-third of the illness days ascribed to this class in the Canadian Sickness Survey.²

Diabetes—Diabetes is the disease which accounts for most of the mortality due to this group. While the death rate for the whole group has declined, mainly due to a considerable reduction in the deaths from asthma,

DIABETES*
Deaths, 1951-1961

Year	Number of Deaths	Rate per 100,000 Population
1951.....	1,584	11.3
1952.....	1,577	10.9
1953.....	1,621	10.9
1954.....	1,607	10.5
1955.....	1,716	10.9
1956.....	1,820	11.3
1957.....	1,866	11.2
1958.....	1,869	10.9
1959.....	1,988	11.4
1960.....	2,081	11.6
1961.....	2,164	11.9

* Based on Dominion Bureau of Statistics *Causes of Death, Canada 1950-60*, Ottawa: Queen's Printer, 1962, p. 11 and Dominion Bureau of Statistics, *Vital Statistics 1961, Preliminary Annual Report*, Ottawa: Queen's Printer, 1962, p. 8.

¹ See Table 5-15.

² Department of National Health and Welfare and Dominion Bureau of Statistics, *Illness and Health Care in Canada, Canadian Sickness Survey, 1950-51*, Ottawa: Queen's Printer, 1960, p. 140.

the rate for diabetes has changed very little during the last decade and the absolute number of deaths has actually increased. It must be remembered that insulin therapy greatly extended the survival period of diabetics so that more of them marry and transmit the disease to their children.

As there are no corresponding data available on either incidence or prevalence trends of the disease, one can only assume that the continually high and even rising mortality rate is due not to a greater risk of dying for diabetes patients, but to a greater number of cases due to the higher incidence among an ageing population.

Observations based on the Canadian Sickness Survey, 1950-51,¹ indicate about 770 cases per 100,000 population, or a total of about 150,000 diagnosed cases now existing in Canada.²

The death rate in 1960 was higher for females (13.4) than for males (10.0) which corresponds to a similar difference in the prevalence rate found in the United States National Health Survey (1,000 and 800 respectively per 100,000 population). The same Survey in the United States reported two-thirds of all diabetics to be 55 years of age or older. Prevalence figures referred to cover only known cases. One estimate indicates that there may be an equal number of unrecognized cases in the community.³ Such estimates are based on the results of multiphase screening programmes which help in the detection of unrecognized cases.

Diabetics account for a large proportion of home nursing services. They are not numerous (about 5 per cent of all medical and surgical cases attended by the Victorian Order of Nurses) but require intensive care. They obtain 14 per cent of all nursing visits made to medical and surgical cases, ranking highest among all disease groups in the average number of visits per case (54 as compared with an average of 19 for all causes). Female cases outnumber male by a ratio of over 2:1, with 90 per cent of all cases being in the age group 45 years and over.⁴

Cases of diabetes, many requiring continuous medication, account for about two per cent of all prescriptions.⁵

¹ These data were not published because the survey sample did not yield a sufficient number of cases for a reliable estimate.

² This very rough estimate compares with the somewhat higher prevalence rate of 900 per 100,000 population in the United States (Health Statistics from the United States National Health Survey: *Diabetes reported in interviews, United States July 1957-June 1959*, United States Department of Health, Education, and Welfare, Washington, D.C., United States Government Printing Office, 1960, p. 7). But then the U.S. mortality rate (15.9 in 1959) is also higher than the Canadian (11.4 in 1959) indicating that a real difference exists in the frequency of the disease in the two countries.

³ Department of National Health and Welfare, 1951, *Epidemiological Data on Chronic Illness in Canada*.

⁴ Dominion Bureau of Statistics, *Home Nursing Services (Victorian Order of Nurses for Canada)*, 1960.

⁵ *Canadian Disease and Therapeutic Index*, A Study of Physician Practice, February-May 1960, Lea Associates, Inc., Flourentown, Pa.

Asthma—Asthma has been the second largest cause of death in this group but one which contributed to the general decline in the mortality, except for the small upswing apparent in 1961.

ASTHMA*

Deaths, 1951-1961

Year	Number of Deaths	Rate per 100,000 Population
1951.....	741	5.3
1952.....	662	4.6
1953.....	644	4.3
1954.....	629	4.1
1955.....	639	4.1
1956.....	598	3.7
1957.....	599	3.6
1958.....	502	2.9
1959.....	494	2.8
1960.....	402	2.2
1961.....	468	2.6

* Based on Dominion Bureau of Statistics *Causes of Death, Canada 1950-60*, Ottawa: Queen's Printer, 1962, p. 11 and communication from the Dominion Bureau of Statistics.

Here again the lack of data on the incidence and prevalence of the disease precludes the full evaluation of the mortality figures and we have no evidence to tell us whether the decline in mortality until 1960 was due to a reduction in the frequency of the disease or, which is more likely, to a reduction of its fatal aspects.¹

Estimates of the frequency of asthma and hay fever in the United States range all the way from about 1,000 to 6,900² per 100,000 population. This may reflect regional differences in the occurrence of the disease, making it doubtful whether the United States National Health Survey prevalence figure (2,340 per 100,000 population) is applicable to Canada. This Survey points

¹ This is another area of illness that requires more systematic study with respect to incidence and its consequences.

² Cf. The Committee for the Special Research Project in the Health Insurance Plan of Greater New York: *Health and Medical Care in New York City*, Commonwealth Fund, Cambridge, Mass.: Harvard University Press, 1957; and State of California, Department of Public Health, *Health in California*, California Health Survey, California State Printing Office (no date).

out the preponderance of asthma and hay fever among young males (under 15 years) as compared with females in the same age group.¹

Diabetes, asthma, hay fever and other diseases in this group are chronic but not necessarily disabling except during acute attacks. Hence, they account for a relatively high proportion of all non-disabling illness.

Following are the percentages accounted for by this entire group of diseases out of total illness and the demand for selected health services:²

	Per Cent
All deaths	2.2
Premature mortality	1.8
Disabling illness	1.3
Non-disabling illness	5.0
Hospital separations	2.2
Hospital days	1.8
Physicians' services	2.0
Prescriptions	7.0
Home nursing	11.1

DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS

This group of diseases, comprised largely of the various types of anaemia, ranks low in its contribution to mortality and non-fatal illness and in its use of health services. Because of the low frequencies it is difficult to establish what the trend has been but the following chart indicates a decline in the death rate which is not matched by what we know of hospital separations. The anaemias thus appear as another group of diseases where modern treatment has succeeded in curbing the mortality if not the frequency of the disease.

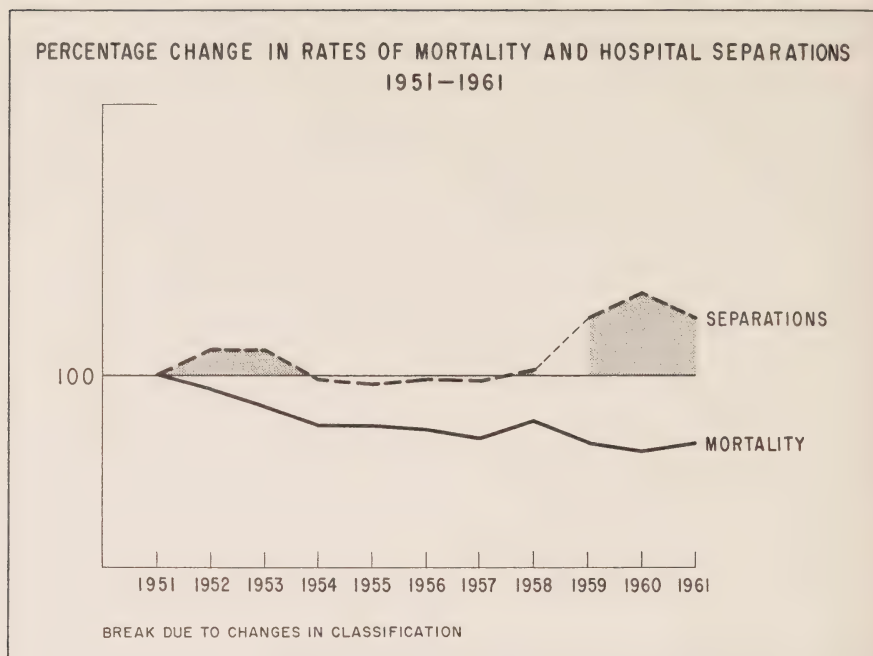
Little is known about the prevalence of anaemia in the general population—a screening test in Baltimore yielded a count of 16 cases per 1,000 persons screened,³ but it would be difficult to say how indicative this figure may be of the situation in Canada.

The death rate has declined from 4.3 per 100,000 population in 1951 to an estimated 2.8 in 1961. The rate of hospital separations varied during the same period upward and downward, starting from a rate of 77 per 100,000 population, and during the most recent three years hovering around the 100 mark.

¹ United States Department of Health, Education, and Welfare, Public Health Service, *Health Statistics from the United States National Health Survey—Chronic Respiratory Conditions reported in interviews, United States July 1957-June 1958*, Washington, D.C., United States Government Printing Office, 1959.

² See Table 5-15.

³ Commission on Chronic Illness, *Chronic Illness in a Large City—The Baltimore Study*, Cambridge, Mass.: Harvard University Press, 1957, p. 485.



A comparison with selected other countries shows the Canadian mortality from these diseases to be roughly in line with the United States, France and Sweden.

The group accounts for less than one per cent of all deaths and life years lost due to premature mortality, less than one per cent of hospital and physicians' services, but a relatively higher share (2.8 per cent) of all prescriptions and of home nursing (6.8 per cent), the latter being due largely to the application of the required injections. The percentages this group accounts for out of the total are as follows:¹

	Per Cent
All deaths	0.4
Premature mortality	0.3
Disabling illness	n.a.
Non-disabling illness	n.a.
Hospital separations	0.4
Hospital days	0.3
Physicians' services	0.9
Prescriptions	2.8
Home nursing	6.8

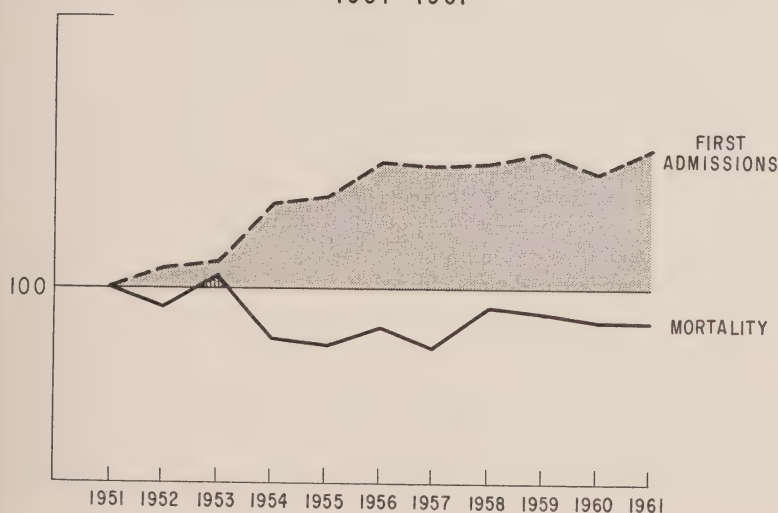
¹ See Table 5-15.

MENTAL, PSYCHONEUROTIC AND PERSONALITY DISORDERS¹

Most health problems have attracted our attention because of their fatal aspects. Mental disease has never been prominent in this respect accounting, as it does, for only a very small proportion of all deaths: in all, 0.3 per cent of all deaths occurring in Canada are ascribed to disorders in this group.

The impact of mental disease lies not in the mortality but in its staggering effect of disability as well as the demand for health services, particularly hospital services. The diseases in this group account for 38.9 per cent of all hospital days. The 3.7 per cent of all prescriptions obtained outside the hospital, being ascribed to this group of diseases may be an understatement to the extent that psychiatric disorders are reported under other diagnoses.²

PERCENTAGE CHANGE IN RATES OF MORTALITY AND FIRST ADMISSIONS
1951-1961



¹ See also McKerracher, D. G., *Trends in Psychiatric Care*, and Richman, A., *Psychiatric Care in Canada: Extent and Results*, studies prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

² In 1961, \$4,428,000 were spent on "medical, surgical supplies and drugs" in mental institutions, amounting to 3.4 per cent of their total operating expenditure, Dominion Bureau of Statistics, *Mental Health Statistics, Financial Supplement, 1961*, Ottawa: Queen's Printer, 1963, p. 10.

With changing patterns of care for the psychiatric patient, both within the institution and in the community, it is becoming more and more difficult to draw conclusions from institutional statistics concerning the actual frequency of these diseases. These data, nevertheless, give some indication of the magnitude of the problem.

Of all hospital beds (192,162) about one-third (67,895) were in mental hospitals in 1960.¹ In addition, there are about 1,500 beds in psychiatric units in general hospitals.

In 1960 over 25 million days were spent in mental hospitals and psychiatric units, with an average daily number of patients of 69,000.² In other words, one in every 260 people is a patient in a psychiatric hospital or unit. It is estimated that, if present admission rates continue, more than one out of every ten infants will spend some part of his life in a psychiatric institution.³ In addition, there are those suffering from psychiatric or emotional disorders but not necessarily confined to hospital whose number is unknown but estimated to be possibly in the neighbourhood of one in ten of the population.⁴

Based on studies in Britain and the United States it has been estimated that the prevalence of emotional and mental disorders among school children is of the order of 5 to 10 per cent,⁵ and mental retardation may affect at least 3 per cent of the population, one-fifth of this number under the age of 20.⁶ Among a large group of employees, a highly selected population group, it has been found that psychiatric disorders account for about 6 per cent of all sickness absenteeism.⁷ All these are estimates of different aspects of psychiatric disorder among the population, which may serve to indicate the magnitude of the problem though they do not lend themselves to a clear and precise over-all picture.

Trends in the frequency and the characteristics of psychiatric disorders are very difficult to interpret in terms of their impact on the health services. On the one hand, there is a tendency to draw more and more types of what previously would have been considered as social maladjustment into the sphere of psychiatric care: alcoholism is one example. Drug addicts are being moved from jails to hospitals or clinics, and other kinds of social

¹ Department of National Health and Welfare, *Hospital Care in Canada*, (unpublished report).

² *Ibid.*

³ *The Canadian Mental Health Association*, brief submitted to the Royal Commission on Health Services, Toronto 1962, Appendix 3.

⁴ This estimate, often heard in Canada and the United States, is considered to be a "very conservative one" in: Tyhurst, J. S., *et al.*, *More for the Mind*, Toronto: The Canadian Mental Health Association, 1963, p. 9.

⁵ *The Canadian Mental Health Association*, *op. cit.*, Appendix 3.

⁶ *Ibid.*, this estimate results in a total of over 100,000 retarded children and adolescents in Canada.

⁷ Generally speaking, absences of over 3 days duration. Dominion Bureau of Statistics, *Illness in the Civil Service*, Statistical Report, 1960, Ottawa: Queen's Printer, 1962, p. 30.

offenders may follow. Psychiatric treatment, on the other hand, has been changing from the purely passive custodial care to intensive treatment with the resulting demand for substituting care in psychiatric units of general hospitals for that in mental institutions for a sizeable portion of the mentally ill.¹

This entire group of diseases accounted for the following percentages of total illness and the demand for selected health services:²

	Per Cent
All deaths	0.3
Premature mortality	0.5
Disabling illness	9.9
Non-disabling illness	n.a.
Hospital separations	2.5
Hospital days	38.9
Physicians' services	1.7
Prescriptions (outside hospital)	3.7
Home nursing	0.7

DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS

This group contains some diseases which are important as causes of death. Among them are conditions often referred to as a "stroke", cerebral haemorrhage, embolism, and thrombosis; crippling and disabling diseases such as multiple sclerosis, various forms of paralysis, epilepsy, and others; and the eye and ear diseases.

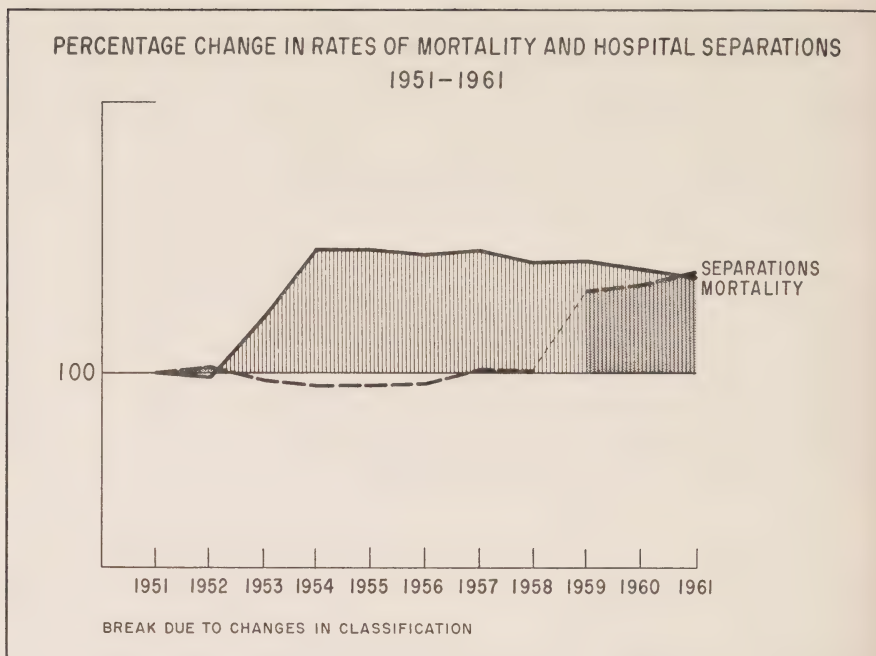
Accordingly, the group ranks fairly high as a cause of death and illness and in terms of its demand on hospital and other health services. The first-mentioned diseases in the group, the vascular lesions, are often combined with diseases of the heart into the cardiovascular group of diseases as typical forms of the degenerative diseases among the older population groups.

The trend in mortality and hospitalization during the period 1951 to 1961 is indicated in the following chart which shows the index for both in 1961 well above that in 1951, although mortality has somewhat declined after the sharp rise earlier in the decade.

The Canadian death rate from these diseases (89.7 in 1959) is lower than that of the United States (108.5), England and Wales (165.6), France (136.4), and Sweden (137.9).

The diseases in this group caused 17,102 deaths in 1961, of which 15,428 were due to vascular lesions affecting the central nervous system. This amounts to 12 per cent of all deaths. The percentage of life years lost due to premature mortality is somewhat lower, however, because most of the

¹ See Chapter 8.
² See Table 5-15.



deaths occur at an advanced age. About six per cent of the total duration of illness (6.3 per cent of disabling, and 5.6 per cent of non-disabling) is due to these diseases which also account for 5 per cent of all hospital days, 5.3 per cent of all prescriptions, 3.9 per cent of all physicians' services, but 11 per cent of home nursing services. This reflects the age of the patients, the generally high degree of disability, and the need for whatever rehabilitation can be achieved.

The following list will allow a comparison of the percentages of total illness and the demand for services accounted for by this entire group of diseases:¹

	Per Cent
All deaths	12.1
Premature mortality	7.4
Disabling illness	6.3
Non-disabling illness	5.6
Hospital separations	3.7
Hospital days	5.0
Physicians' services	3.9
Prescriptions	5.3
Home nursing	11.0

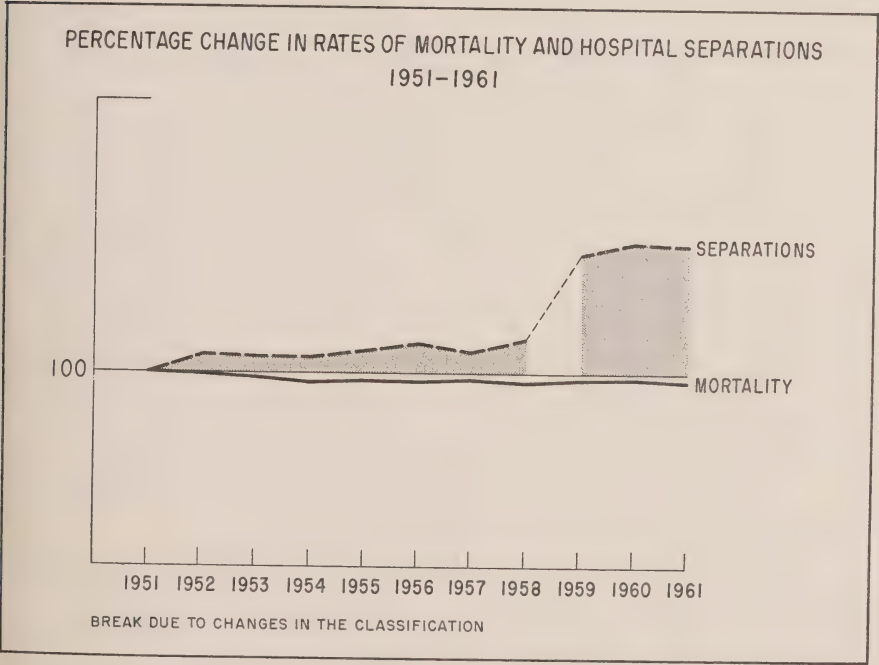
¹ See Table 5-15.

While the vascular lesions account for most of the mortality from the diseases in this group and for about one-fourth of the duration of hospitalization, they share the frequency of hospitalization (separations) about equally with the eye diseases and the ear diseases.¹ The latter, however, account for more than half of the prescriptions in this group.

DISEASES OF THE CIRCULATORY SYSTEM

These are the various types of heart disease, hypertension, arteriosclerosis and other diseases of veins and arteries.

The following chart shows a fairly stable trend of mortality over the last decade with a slight reduction (3.8 per cent) between 1951 and 1961. The line showing the trend of hospital separation, broken due to changes in the classifications, indicates an increased frequency of hospitalization for these diseases.



¹ The respective rates per 100,000 population are:

	Hospital Discharges	Hospital Days
Vascular lesions	174	7,290
Diseases of eye	198	1,706
Diseases of ear	151	1,182

The comparison with selected other countries shows Canada's mortality rate (273.1) lower than that of the United States (370.7), England and Wales (385.8), and Sweden (307.9), but somewhat higher than that of France (214.8). Differences in the age composition of the respective populations have to be taken into account in interpreting these figures.

The diseases of the circulatory system account for about 40 per cent of all deaths, by far the highest percentage of all disease groups. These are followed by the malignant neoplasms which account for about 17 per cent of all deaths. Although death from the circulatory diseases usually occurs at an advanced age, the sheer number of deaths also makes it the leading cause group in regard to life years lost due to premature death. Their reported share in disabling and non-disabling illness is about one-tenth of the total from all causes (9.1 and 10.6 respectively).

In terms of hospitalization, this group ranks second, after the mental diseases with 7.9 per cent with the latter taking up almost 40 per cent of all hospital days. Its demand on physicians and services is 5.2 per cent of total demand and for prescriptions 16.2 per cent, for home nursing services 11.9 per cent. It ranks second highest in the requirement for these two types of care.

Within this group of diseases, the arteriosclerotic and degenerative heart disease account for almost 80 per cent of the deaths.

Following are the percentages accounted for by this group of total illness and the demand for selected services:¹

	Per Cent
All deaths	38.8
Premature mortality	22.0
Disabling illness	9.1
Non-disabling illness	10.6
Hospital separations	6.3
Hospital days	7.9
Physicians' services	5.2
Prescriptions	16.2
Home nursing	11.9

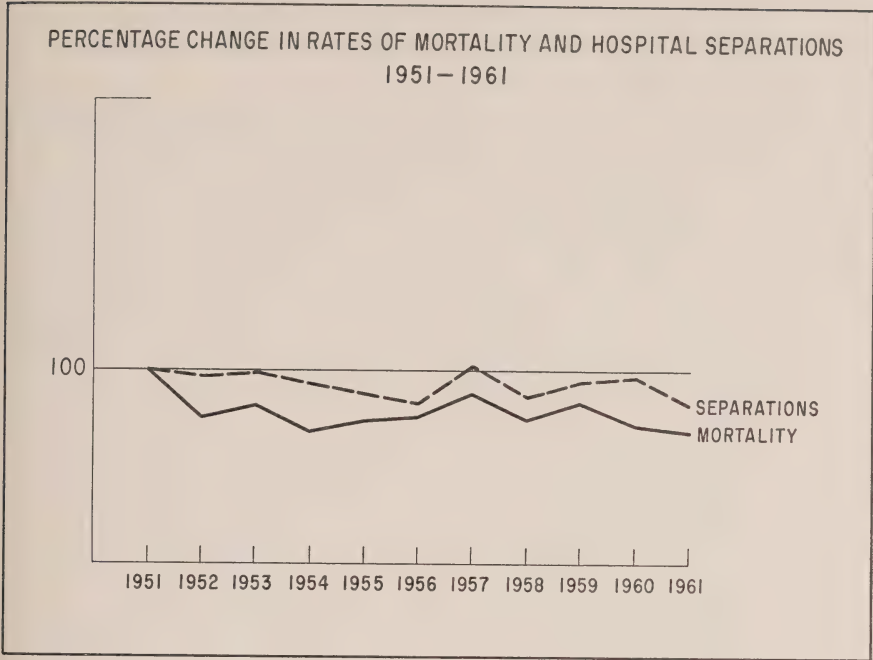
DISEASES OF THE RESPIRATORY SYSTEM

Among the diseases in this group are the common cold, influenza, pneumonia, tonsillitis and other diseases related to the respiratory tract.

The trend in the mortality from these diseases and their hospitalization from 1951 to 1961 is shown in the following chart.

In both series the rates have remained below the 1951 figures (except for hospital separations in 1957). There is, however, no continuous trend because the most frequent of these diseases (common cold, influenza, and pneumonia) are subject to epidemic outbreaks. In fact, 1951, the initial

¹ See Table 5-15.



year of this period, was a year of a widespread Asian influenza epidemic which brought the incidence of related respiratory disorders and their complications to a high level.

Because of the susceptibility of the incidence of respiratory diseases to epidemic outbreaks and environmental or climatic conditions, comparisons with other countries would be meaningful only over a long period of time taking into account a number of extraneous factors involved.

There is evidence, however, that new drugs and treatment methods have succeeded in substantially reducing mortality from respiratory diseases as shown by the following figures for the period prior to 1951.

DEATH RATES FROM INFLUENZA, BRONCHITIS AND PNEUMONIA
COMBINED, 1926-1950

Average 1926-30	Average 1931-35	Average 1936-40	Average 1941-45	Average 1946-50
134.0	100.6	97.4	69.0	55.2

SOURCE: Dominion Bureau of Statistics, *Canadian Vital Statistics Trends, 1921-1954*, Reference Paper No. 70, Ottawa: Queen's Printer, 1956, p. 33.

The respiratory group accounts for about five per cent of all deaths with a somewhat higher proportion (7.2 per cent) of all life years lost in a year due to premature mortality.

The impact of the respiratory diseases, however, lies in their demand on physicians' services (15.1 per cent), prescriptions (16.7 per cent), and in their share of disabling (28.0 per cent) and non-disabling illness (23.4 per cent), rendering them the highest ranking group in these respects. They also account for 13.9 per cent of hospital separations, but only 4.9 per cent of all hospital days and 1.5 per cent of home nursing services.

Following are the percentages accounted for by all diseases of the respiratory system out of total illness and total demand for selected services:¹

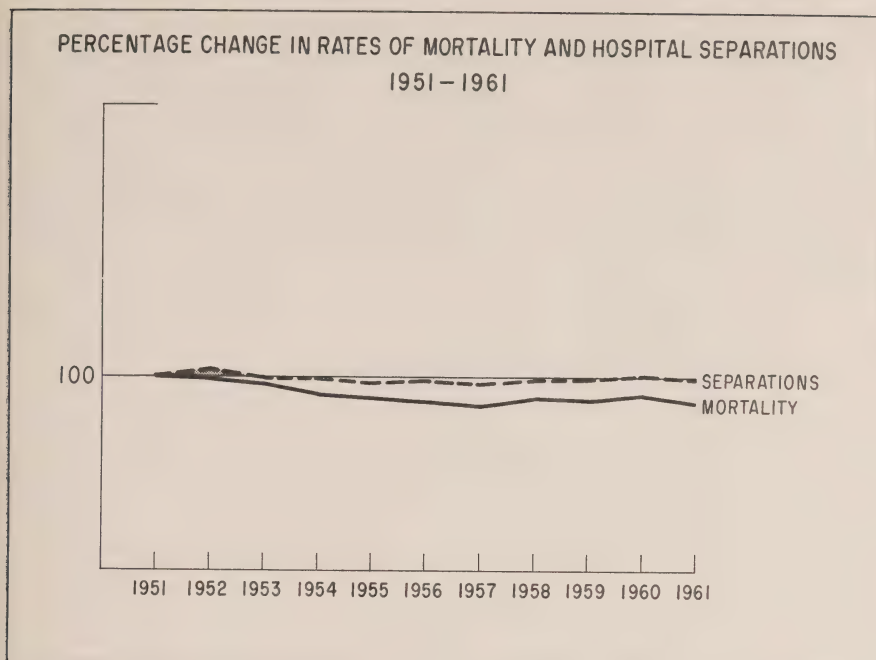
	Per Cent
All deaths	5.7
Premature mortality	7.2
Disabling illness	28.0
Non-disabling illness	23.4
Hospital separations	13.9
Hospital days	4.9
Physicians' services	15.1
Prescriptions	16.7
Home nursing	1.5

Among the diseases of the respiratory system, the common cold, influenza and other acute infections of the upper respiratory tract are responsible for about one-fifth of all illness days, disabling and non-disabling; and for about one-tenth of all physicians' services. Hypertrophy of tonsils (tonsillitis) and adenoids account for 6.3 per cent of all general hospital separations, but, because of the generally short stay, for only 1.3 per cent of all general hospital days. There are 1,116 cases per 100,000 population, the rate being highest (5,356) for the four-year olds. Correspondingly, there are 2,359 days per 100,000 population but 9,449 among the four-year olds.

DISEASES OF THE DIGESTIVE SYSTEM

This group includes, among others, the various diseases (except cancer) of the stomach, ulcers, appendicitis, hernia, as well as diseases of the liver, gallbladder, and pancreas—a rather heterogeneous group. The following chart indicates a slow decline in the mortality from these diseases between 1951 and 1961, but little change in the frequency of hospitalization.

¹ See Table 5-15.



A comparison with the mortality rates of other selected countries indicates rates of the same order, except for the higher rate in France.

The diseases of the digestive system rank on the whole about midway among the groups covered in this chapter, except for occupying the third rank for physicians' services (9.6 per cent), and fourth each for hospital services (5.7 per cent) and prescriptions (8.2 per cent). They account for 3.7 per cent of all deaths, 4.3 per cent of life-years lost, 6.8 per cent of disabling and 8.6 per cent of non-disabling illness.

Of the deaths due to this group of diseases about one-fifth (1,083 in 1961) are caused by cirrhosis of liver. The corresponding number of deaths in 1951 was 607. Somewhat lower is the number of deaths from intestinal obstruction and hernia (929) and gastro-enteritis and colitis (864). The number of deaths from appendicitis has declined from 262 in 1951 to 187 in 1961.

Appendicitis accounts for 1.9 per cent of all general hospital separations and 1.4 per cent of general hospital days. The rate of hospital separations per 100,000 population is 331, with 2,608 hospital days.

The hospital utilization rate for hernia is similar, 1.8 per cent of all general hospital separations and 1.5 per cent of hospital days. There are 315 separations per 100,000 population, with 2,883 hospital days.

Although the International Classification includes dental disorders among the diseases of the digestive system, the bulk of such disorders as caries (forming a large part of the dentist's work load) and other conditions usually treated at the dentist's office will be discussed separately later in this chapter.

With this exception, the diseases of the digestive system account for the following percentages of total illness and the demand for selected services:¹

	Per Cent
All deaths	3.7
Premature mortality	4.3
Disabling illness	6.8
Non-disabling illness	8.6
Hospital separations	10.8
Hospital days	5.7
Physicians' services	9.6
Prescriptions	8.2
Home nursing	3.8

DISEASES OF THE GENITO-URINARY SYSTEM

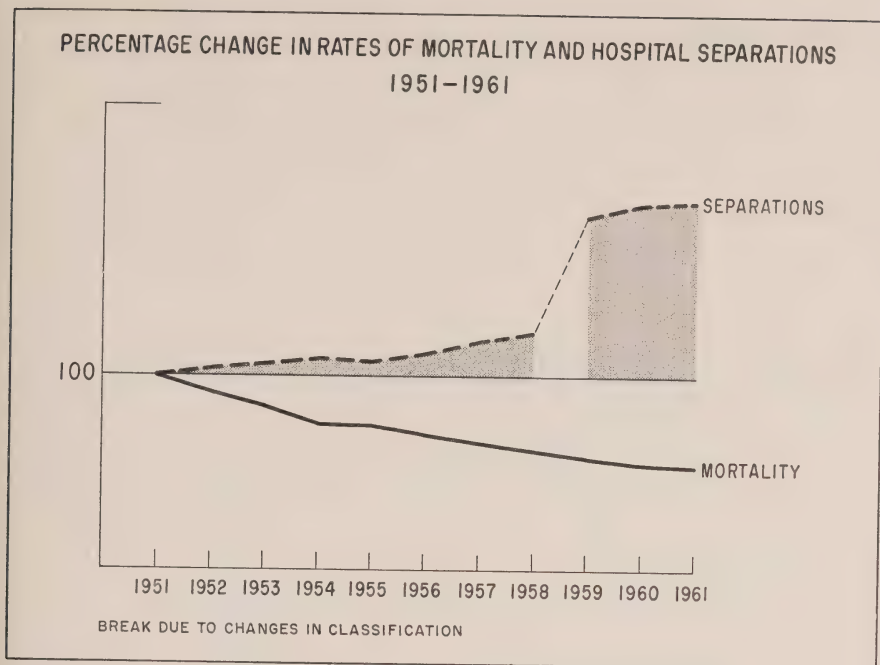
This group includes nephritis, diseases of kidney and bladder, and the various diseases (except cancer) of the genital organs. Increased hospitalization is accompanied by a steadily declining mortality rate. This group of diseases shows little variation in the death rate between Canada and other selected countries.

As a group, these diseases rank about midway in terms of their share of illness and the demand for health services, accounting for the following percentages of:²

	Per Cent
All deaths	2.1
Premature mortality	1.5
Disabling illness	3.5
Non-disabling illness	5.0
Hospital separations	6.9
Hospital days	3.5
Physicians' services	8.7
Prescriptions	4.4
Home nursing	1.8

¹ See Table 5-15.

² See Table 5-15.



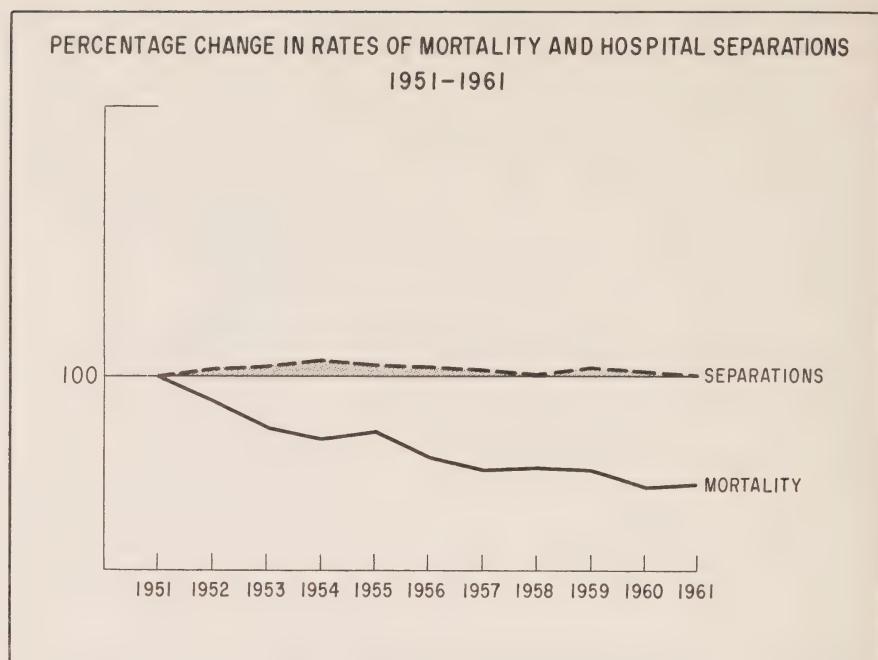
About one-half of the relatively high demand for physicians' services is due to the diseases of the female genital organs.¹ Nephritis, however, accounts for about one-half of the deaths in this group. The number of these deaths has decreased from 3,043 in 1951 to 1,553 in 1961, with a correspondingly larger decline in the rate.

MATERNITY AND COMPLICATIONS²

This group is peculiar in that most of the conditions included are not the result of an abnormal state of health, but they do require health services; only the exceptional complications are manifestations of ill-health. The only other exception is the last class—"supplementary"—which also includes a substantial part of services not related to illness; for example, periodic health examinations or well-baby care.

¹leRiche, H., *A Sample Study on the Participants of a Canadian Prepayment Medical Care Plan in Regard to Costs, Disease Episodes and Services*: Physicians' Services Incorporated, Toronto, 1957.

²This heading is used throughout this Report instead of the more descriptive and correct but lengthy terminology of the International Classification of Diseases which reads: "Deliveries and complications of pregnancy, childbirth and the puerperium".



The decline in maternal mortality has been substantial and continuous. This is one of the indicators frequently used as reflecting general health conditions in a country. It is affected not only by the state of personal health services, but also by hygiene and sanitation, as well as living standards and general health habits. The extent of hospitalization, on the other hand, is the result of the birth rate¹ and the proportion of deliveries occurring in hospital.²

The Canadian maternal mortality rate, though low (46.0 per 100,000 live births in 1961 and 54.9 in 1959) is somewhat higher than the rates for 1959 in the United States (37.4), England and Wales (38.7) and Sweden (23.8) indicating that there is room for still further improvement. It is lower than the rate in France (55.0).

This group of conditions ranks low in terms of mortality, only a little higher in the extent of disability, but fairly high in its demand for services, accounting for the following percentages of:³

¹ The birth rate stood at 27.2 in 1951, reached a peak of 28.5 in 1954, and then declined gradually to 26.1 in 1961.

² The percentage of births occurring in hospital rose steadily from 79.1 per cent in 1951, to 96.9 per cent in 1961.

³ See Table 5-15.

	Per Cent
All deaths	0.2
Premature mortality	0.3
Disabling illness	2.5
Non-disabling illness	0.5
Hospital separations	18.3
Hospital days	5.7
Physicians' services	11.3
Prescriptions	3.5
Home nursing	9.2

Of the hospital days required by this group, about 70 per cent are due to deliveries without any complication.¹ In 1926 the maternal mortality rate² was 560 per 100,000 live births and declined to 46 by 1961. An indication of the possibility of further improving the Canadian rate is obtained by examining the differences in the rate for those provinces which have not been sharing equally in the remarkable improvement that has taken place over the last quarter of a century.³

	Maternal Mortality Rate per 100,000 Live Births
Newfoundland	88
Prince Edward Island	18
Nova Scotia	21
New Brunswick	55
Quebec	64
Ontario	38
Manitoba	48
Saskatchewan	34
Alberta	21
British Columbia	37
Yukon	— ⁴
Northwest Territories	— ⁴
Canada	46

DISEASES OF THE SKIN AND CELLULAR TISSUE

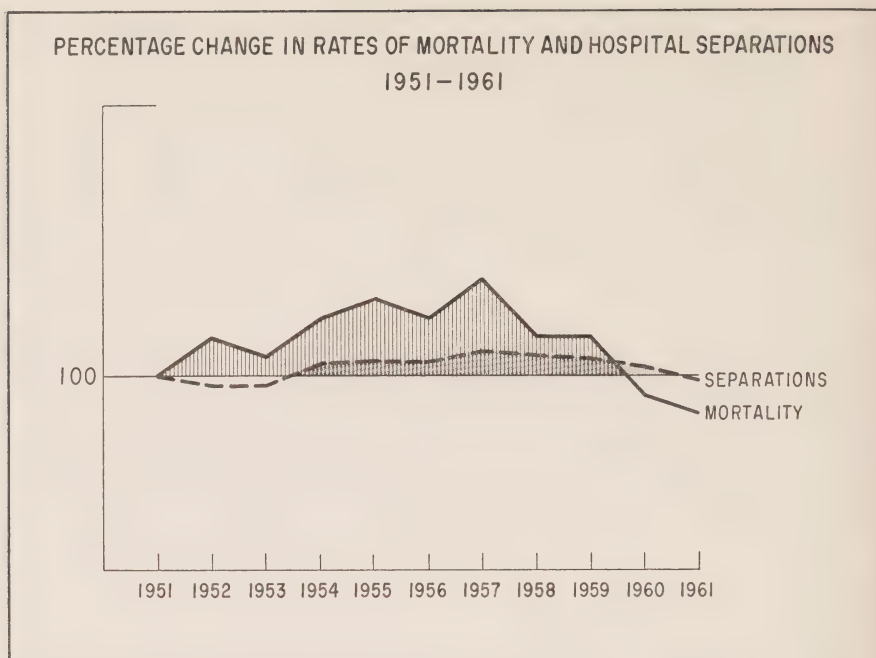
This group includes boils, carbuncles, impetigo and other skin conditions such as dermatitis but excludes cancer.

Apparent changes, particularly in the mortality rate, may not be significant because of the comparatively small numbers involved (165 in 1960). The same applies to the trend of hospital separations which, how-

¹ This does not include new-born care which is shown under the "supplementary" group.
² Per 1,000 live births.

³ The mean between the 1960 and 1961 rate is shown to reduce the effect of chance variations due to small numbers, based on Dominion Bureau of Statistics, *Vital Statistics 1961*, Ottawa: Queen's Printer, 1963, p. 213.

⁴ Rates for the Yukon and Northwest Territories omitted. Because of the small populations in these Territories maternal deaths are very infrequent so that, for instance, one such death in the Yukon means a jump in the rate of about 180. Comparisons of rates based on such small frequencies would not be meaningful.



ever, vary to a lesser extent, remaining at about the same level throughout the period.¹

As a group, these diseases rank generally low in their share of illness and their demand for health care, with the exception of physicians' services. They account for the following percentages of:²

	Per Cent
All deaths	0.1
Premature mortality	0.1
Disabling illness	1.6
Non-disabling illness	5.5
Hospital separations	2.0
Hospital days	0.9
Physicians' services	8.3
Prescriptions	4.2
Home nursing	1.6

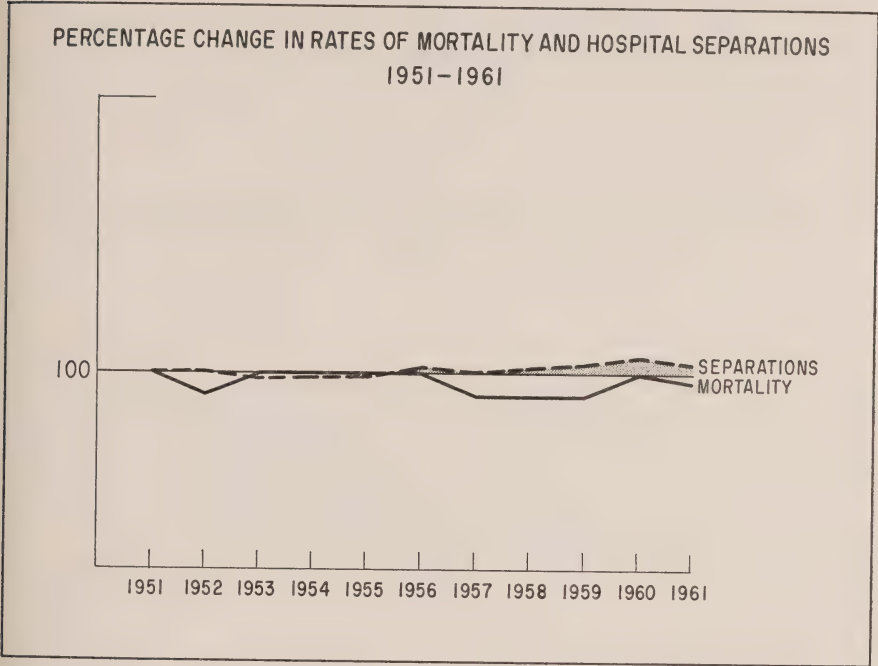
The demand for physicians' services is due largely to the diseases described as infections of skin and subcutaneous tissue, which also account for about half of the prescriptions required by this group.

¹ Comparable data for other countries are not available.

² See Table 5-15.

DISEASES OF THE BONES AND ORGANS OF MOVEMENT

This is the group of diseases which includes the various forms of arthritis and rheumatism.¹



The impact of this group of diseases lies mainly in their share of non-disabling illness, to a lesser extent of disabling illness, and also in their demand for physicians' services, prescriptions and home nursing services. They account for the following percentages of:²

	Per Cent
All deaths	0.3
Premature mortality	0.3
Disabling illness	5.7
Non-disabling illness	10.0
Hospital separations	2.7
Hospital days	2.9
Physicians' services	7.2
Prescriptions	4.6
Home nursing	5.5

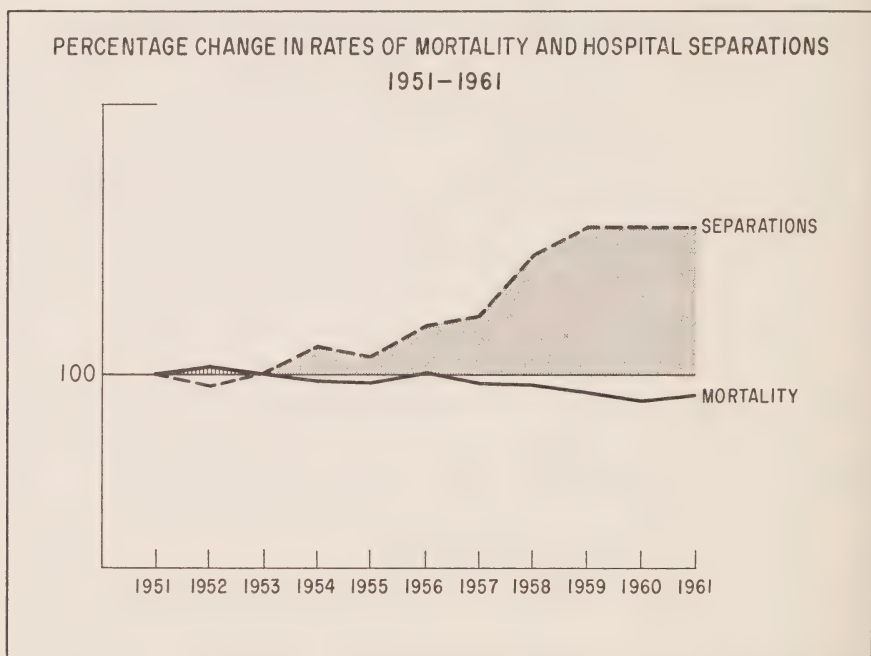
¹ Comparable data for other countries are not available.

² See Table 5-15.

About 80 per cent of the non-disabling and 90 per cent of the disabling illness in this group is due to arthritis and rheumatism, and similar proportions apply to the demand for physicians' services, prescriptions and home nursing services.

CONGENITAL MALFORMATIONS

The title of this group of conditions is self-explanatory, the distinction between various types of malformations resting primarily on the site of the deformity.



Mortality has been declining slowly but steadily although the incidence of hospitalization has gone up, indicating some success in reducing the mortality if not the frequency of these conditions. Whether the increased hospitalization rate reflects only a greater proportion of these conditions being brought to treatment, or whether it is also an indication of an increasing incidence can only be established definitely when more complete statistics and the results of studies become available regarding the suspected effects of exposure to radiation, drugs and other environmental factors.

Canada's mortality rate is similar to that of the United States, England and Wales, France, and Sweden.

Because of the deaths occurring generally at an early age, the impact of these conditions lies particularly in their share in life years lost due to premature mortality. Further successes in keeping children with malformations alive and wider application of rehabilitation services and prosthetic devices may well increase the demand for a larger share of health services. At present, congenital malformations account for the following percentages of:¹

	Per Cent
All deaths	2.0
Premature mortality	6.5
Duration of illness	n.a.
Hospital separations	0.8
Hospital days	0.7
Physicians' services	0.3
Prescriptions	nil
Home nursing	0.2

CERTAIN DISEASES OF EARLY INFANCY

This group comprises only some of the causes responsible for Canada's relatively high infant mortality rate. Besides the congenital malformation, they are largely confined to those, responsible for the deaths during the neo-natal period, i.e., the first four weeks after birth. The most frequent of these conditions are asphyxia, birth injuries and immaturity.

Mortality has been slowly declining while the incidence of hospitalization has risen sharply, indicating growing success in treatment, a trend similar to that found for congenital malformations with which this group is not unrelated.

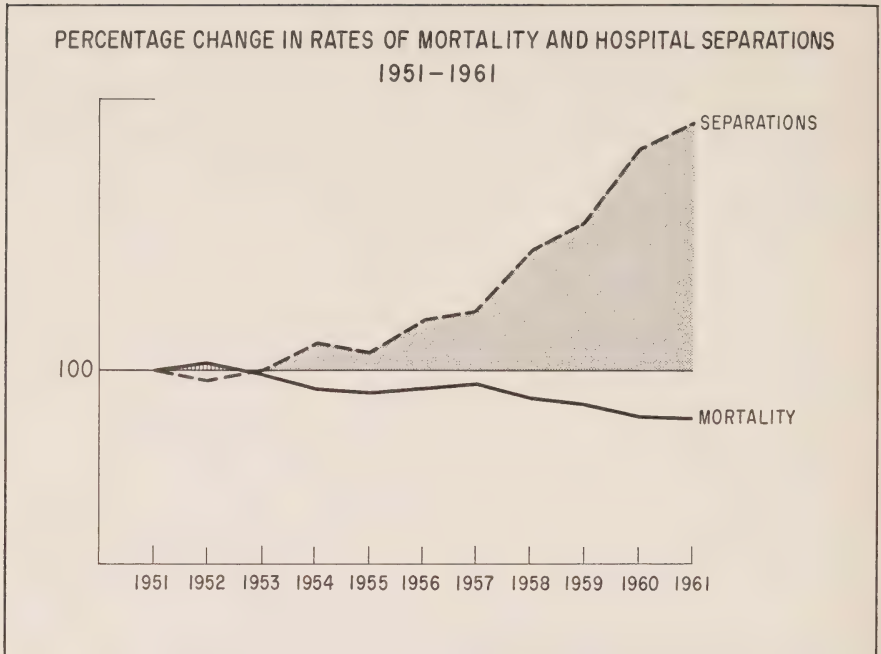
The mortality rate from these diseases (1,555 in 1959)—per 100,000 live births—is at about the same level as that in the United States (1,600); somewhat higher than in England and Wales (1,244), France (1,307), and Sweden (1,070).

These diseases are among the major causes of death also in Canada. Because almost the entire expected life span is lost in each case, this group of diseases ranks second in terms of premature mortality. It accounted for the following percentages of:²

	Per Cent
All deaths	5.1
Premature mortality	17.4
Duration of illness	n.a.
Hospital separations	0.4
Hospital days	0.3
Physicians' services	1.3
Prescriptions	0.2
Home nursing	0.1

¹ See Table 5-15.

² See Table 5-15.

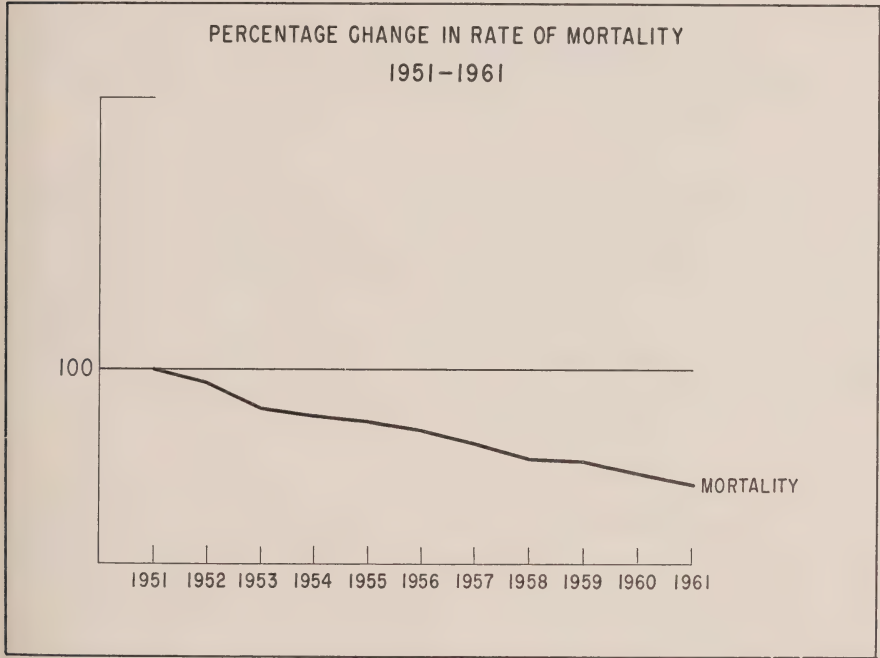


While most of the diseases in this group have shown some decline in the respective mortality rates, some still remain stubbornly high, especially where immaturity is a complicating factor. Immaturity as such accounts for almost one-third of the deaths in this group. Post-natal asphyxia and atelectasis, especially when combined with immaturity, is another major component, followed by birth injuries. Pneumonia deaths among the newborn remain on a high level as do the haemolytic diseases of the newborn. A notable reduction has taken place in the newborn deaths arising from certain diseases of the mother during pregnancy, particularly toxæmia of pregnancy.

The health of the newborn is to a large extent a function of the care given to mother and baby, their nutrition, and standards of hygiene prevailing in their environment. That there is room for improvement in these respects is clearly indicated by the differences among the mortality rates from diseases of the newborn in the various provinces which in 1959 ranged from 1,333 per 100,000 live births in Manitoba to 4,950 in the Northwest Territories—or from rates approaching those of European countries with good health conditions to those found in countries with the worst.

SYMPTOMS, SENILITY AND ILL-DEFINED CONDITIONS

This group of conditions is largely residual including anything that does not belong into one of the other groups or where the diagnosis is not sufficiently specific to permit of its classification under any of the foregoing headings. In the latter case, the inclusion in this group is due to inadequate information in the basic records. Thus, the comparison of data over a period of time or between different countries will reflect to a considerable degree changes in the quality of "bookkeeping" rather than actual health conditions.



International comparisons are affected by differences in recording practices that impair the quality of the resulting statistics. Canada's mortality rate ascribed to this group is the lowest among the selected countries (in 1959):

Canada	8.8
United States	10.8
England and Wales	17.2
France	167.6
Sweden	24.9
Mexico	138.9
Ceylon	201.2

The group's apparent share in illness and demand for health services must be interpreted with care bearing in mind the above qualifications:¹

	Per Cent
All deaths	0.9
Premature mortality	0.6
Disabling illness	8.1
Non-disabling illness	17.0
Hospital separations	1.9
Hospital days	0.9
Physicians' services	6.6
Prescriptions	5.4
Home nursing	4.3

The percentage is lowest in regard to deaths and hospital days, the two series which are based on well established record systems. The data on illness days, both disabling and non-disabling, are based on lay information. The often minor causes of non-disabling illness may be due to vague symptoms such as headaches or pains, not diagnosed by a physician, and therefore not recognizable as a specific disease entity under any other heading.

ACCIDENTS, POISONINGS, AND VIOLENCE

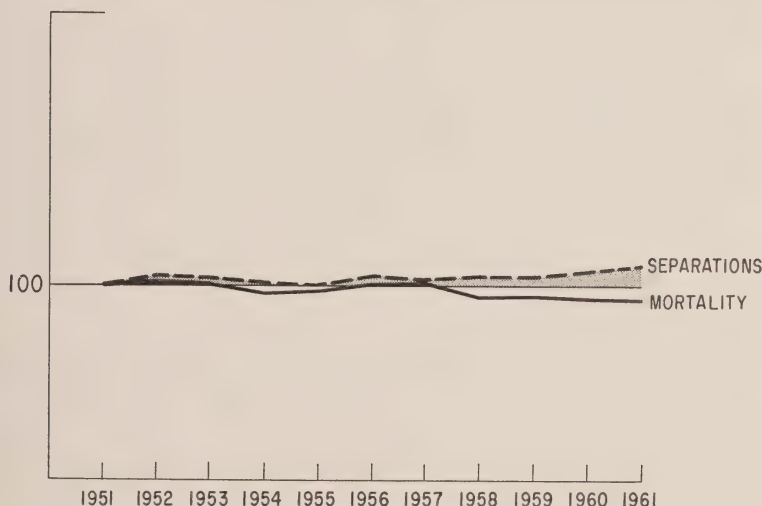
This group deals with injuries inflicted on the body by the extraneous circumstances mentioned. In this respect the injuries differ from the health problems discussed in the foregoing sections. Unlike the diseases reviewed there, the injuries do not stem from malfunctions in the body or mind but from situations or occurrences which as such would bear no relation to a person's health. Hence, the causes of accidents, which form the bulk of this group, and violence have been considered in the past as lying outside the area of medical concern which has been limited to the treatment of the resulting injuries. This has changed, however, since injuries as a result of accidents have developed into one of our major health problems. It is becoming increasingly recognized and accepted that there is such a thing as the epidemiology of accidents; that medical science can contribute to their control by studying the physical and mental conditions leading to accidents and violence. Nevertheless, the causation of accidents is not primarily a

¹ See Table 5-15.

medical problem. We sympathize with the difficulties of the medical profession in delineating their responsibility in this field.¹

A dual classification is available for the study of accidents. They can be categorized either by their external cause (e.g., motor vehicle accidents) or by the nature of injury (e.g., fracture of skull). The latter is important from the point of view of treatment, but as we are more concerned with the social aspects of accidents, the external causes will be reviewed here briefly under the following headings: railway accidents, motor vehicle accidents, other road vehicle accidents, water transport accidents, aircraft accidents, poisonings, falls and other miscellaneous accidents.

PERCENTAGE CHANGE IN RATES OF MORTALITY AND HOSPITAL SEPARATIONS 1951-1961



¹ See editorial in the *Canadian Medical Association Journal*, July 15, 1959, Vol. 81, p. 112: "... a great number of demands are made upon our profession nowadays to show leadership and take the initiative in reforming society. We are required, for example, to deal with the growing army of alcoholics in our midst and to dissuade the young from the abuse of tobacco. We are expected to stop executives from killing themselves with overwork and overeating, to transform homosexuals into heterosexuals and to change sexual offenders, by surgery and psychiatry, into law-abiding citizens. The editor of a learned contemporary has recently requested us to assist in the abolition of boxing, and some think that we should take the lead in stamping out that other form of slaughter, the automobile accident. Now all these problems certainly have a medical angle, but we can scarcely be expected to deal with them alone. We have the good of the people at heart, but what if they do not want to be done good to! If people want to get fat and lazy, or drink themselves to death or hit each other, what are the limits of our responsibility to them?"

Both mortality and hospitalization show but little change, the former increasing and the latter decreasing slightly. The comparison with selected other countries shows the Canadian mortality rate as being of the same order of size as that in other countries and very close to the rate in the United States (54.1 and 52.2 respectively in 1959).

Accidents rank high as causes of mortality—they are the main cause of deaths among the younger age groups—and as causes of non-fatal illness. They also take up a substantial part of our health services, accounting for the following percentages of:¹

	Per Cent
All deaths	7.9
Premature mortality	14.3
Disabling illness	5.7
Non-disabling illness	4.4
Hospital separations	7.5
Hospital days	4.7
Physicians' services	6.7
Prescriptions	4.5
Home nursing	3.4

The high toll in terms of life years lost due to premature mortality is due to the high rate of fatal accidents among children and young adults. Accidents have taken the place of the infectious diseases by killing and injuring people in their prime of life. Of the 11,229 deaths due to accidents in 1961, 3,882 (or 34.6 per cent) were due to motor vehicle accidents, the remainder to accidental falls, drownings, fires, and other causes.

SUPPLEMENTARY CLASS

This group has been added to the classification of diseases and injuries in order to account for health care given without relation to a certain specific illness or any actually existing condition. Shown under this heading are, for instance, the days of newborn care in the hospital, well-baby care by physicians as well as X-ray or laboratory examinations without evidence of illness, prophylactic injections, vaccinations, and similar procedures.

This group of services accounts for the following percentages of:²

	Per Cent
Hospital separations	13.7
Hospital days	5.2
Physicians' services	4.7 ³
Prescriptions	12.5
Home nursing	18.0

Most of these services can be considered as preventive.

To ascertain the full extent of personal preventive care now provided a number of other services should also be included. Immunization procedures,

¹ See Table 5-15.

² See Table 5-15.

³ Based on LeRiche, *op. cit.*, p. 80. Physicians' services include refractions accounting for 41 per cent of the cost of services in this group (*ibid.*, p. 54.)

for instance, are performed by the public health services as well as private physicians; so are well-baby and pre- or post-natal care. leRiche estimates that under the Physicians' Services Incorporated¹ "between 13.26 and 16.51 per cent of its disbursements" are allocated to "physiological and preventive" services in which he includes also obstetrical services and services for symptoms and ill-defined illness.

THE HANDICAPPED

In order to study the impact of the various health problems on the community, and on the health services in particular, we have found it useful to review what is happening during a given year.

This approach, however, obscures the impact of either good or ill health on the individual. In order to see how he is affected by illness, we want to know also what happens to the same individual, or the same group of individuals, over a period of years, possibly an entire lifetime. Here is an example: we may find that a certain disease in a given year accounts for 365 days of disability. This may represent 365 people, each of whom was disabled for only one day, or it may be the experience of one individual incapacitated for 365 days. Anyone found to be incapacitated during the whole year is most likely also to have been incapacitated before the beginning of that year; and his incapacity is likely to continue after the end of the particular year chosen for the review. In some cases this condition will continue for the patient's lifetime.

All these cases—ranging from those with a disability of one day to those with permanent disabilities—are reflected in the statistics depicting the annual demand for health services.

Yet, if instead of looking at the current situation only at a particular period of time we follow the individual or groups of people over a period of time, perhaps their lifetime, we observe different problems. The difference between a day-long and life-long illness—to mention the two extremes—is not merely a matter of degree. Long-term illness and disability often require not necessarily more but different services from those provided in cases of short-term illness. Long-term illness, and particularly disability, have a much greater social impact on the individual, his family, and the community than the sum total of a correspondingly larger number of short-term illnesses or temporary disabilities.

In the previous sections we have reviewed illness based largely on the diseases and injuries as its causes. When we think of impairments and handicaps, however, we look at the consequences rather than the causes of illness. Thus, identical handicaps may be the result of widely different diseases

¹ *Ibid.*, p. 32.

or injuries. The absence of a limb, for instance, may have been caused by injury, by congenital malformation, or by an amputation in the course of the treatment of a disease. At this stage, then, treatment and rehabilitation services will be similar for similar handicaps, regardless of the original cause of the handicap. In many, though not all, of these cases the possibilities of treatment for the underlying disease or injury will have been exhausted, and what remains to be done is mainly in the nature of compensating devices, medical restoration, and social rehabilitation including training and special schooling.

In order to assess the need for these services and to evaluate the present supply, one has to introduce a new dimension into the health statistics by taking a count of persons with various impairments in which the emphasis is on the type and degree of the residual handicap rather than its causes. We refer to this as a different dimension because such a count cuts across the previously used classification of health problems in terms of the causative disease or injury. Nor is the term impairment or handicap necessarily synonymous with illness. Disabilities not causing pain or discomfort, or compensated impairments are often not considered or counted as illness. Examples are impairments of sight or hearing—if compensated by glasses or hearing aids—or the loss of a limb—if compensated by prosthetic devices.

An attempt to estimate present and future needs for rehabilitation services, appliances, special schooling and employment facilities, and institutional services is circumscribed by the availability of limited data for Canada. They suffice, however, to suggest the order of magnitude of the problem and to point to some of the major requirements. The important criteria in evaluating health and social needs in respect to impairments are: (1) the nature or type of impairment, (2) its degree, and (3) its duration.

The Canadian Sickness Survey 1950-51 produced some data on the prevalence of permanent physical disabilities in Canada. The rates and their application to Canada's 1961 population are shown in Table 5-13. We have in Canada somewhere around one and one-quarter million people with permanent physical handicaps. Of these, about 56 per cent are of minor or moderate nature, 44 per cent are classified as severe or total.¹ Those severely

¹ The severity groups of the chronic disabilities, deformities and amputations enumerated in the original survey are defined as follows: Minor—not interfering to any practical extent in the day-to-day functioning on the job or at home; Moderate—appearing to have only a localized effect on conduct in daily employment or at home but not seriously affecting a person's general way of life; Severe—interfering considerably with work or normal home responsibilities (persons in this group were not totally bedridden but generally had to take life easily, take much extra rest, or be confined to bed during acute phases of disability); Total—largely necessitating confinement to bed, a wheelchair or a sitting position (in addition, assistance was usually required in carrying out the simple functions of everyday living). Department of National Health and Welfare and Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Canadian Sickness Survey, 1950-51, Ottawa: Queen's Printer, 1960, p. 25.

or totally handicapped as a result of chronic disability, deformity, or amputation number over half a million. From the nature of the original survey it appears that this is a conservative estimate because of the reluctance to report certain disabilities to an interviewer and also because long-term patients in institutions may not have been included in the household information.¹

TABLE 5-13 PERMANENT PHYSICAL DISABILITIES, ESTIMATED NUMBER AND RATE PER 1,000 POPULATION BY AGE GROUP, BY SEVERITY, CANADA, 1961*

Age Group	All Severity Groups		Minor and Moderate Disabilities		Severe and Total Disabilities	
	Number	Rate	Number	Rate	Number	Rate
All ages.....	1,295,000	71	730,000	40	565,000	31
Under 15....	111,000	18	.....	.....	.....	.....
15-24.....	.....	.....	42,000	16	.....	.....
25-44.....	297,000	61	190,000	39	107,000	22
45-64.....	415,000	131	238,000	75	177,000	56
65 and over	355,000	255	142,000	102	213,000	153

* Based on Department of National Health and Welfare and the Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Canadian Sickness Survey, 1950-51, Ottawa: Queen's Printer, 1960, and Dominion Bureau of Statistics, *Census 1961*, Ottawa: Queen's Printer, 1963.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

NOTE: . . . means survey sample insufficient for estimates.

The primary causes of all these disabilities, whether minor or severe, were shown as being distributed as follows:²

	Per Cent	Estimated Number of Cases in 1961
ALL CAUSES	100.0	1,290,000
Heart disease	13.1	169,000
Impairments due to accidents	12.6	162,000
Arthritis and rheumatism	11.9	154,000
Deafness	7.6	98,000
Blindness and near blindness	6.9	89,000
Chronic diseases of nervous system	5.9	76,000
Other causes	42.0	542,000

¹ The rate of impairments found in the United States National Health Survey is about twice as high (141.4) as the Canadian rate (71) but the concept used there is somewhat broader and the rate also includes mental disorders. United States Department of Health, Education, and Welfare, *Health Statistics—Impairments by type, sex, and age, United States, July 1957-June 1958*, Washington, D.C., United States Government Printing Office, 1959, p. 8.

² Based on Department of National Health and Welfare, Dominion Bureau of Statistics, *op. cit.*, p. 114.

Of the 565,000 severe or total disabilities, the survey tells us only that 19.1 per cent (or slightly over 100,000 in 1961) were due to heart disease, and 11.8 per cent (or some 60,000 in 1961) to arthritis and rheumatism.

Since the data quoted above are limited to physical disabilities, it is necessary to turn to other sources to determine the extent of long-term disability due to psychiatric disorders. No survey has as yet been undertaken to obtain this information for the population of Canada as a whole. Among psychiatric patients in institutions on a given day,¹ some 33,000 had been in the institution for more than 3 years,² and another 10,000 for over one year on the Census day. On the same day, there were nearly 20,000³ mentally deficient patients in institutions. This total of some 50,000 to 60,000 does not include the considerable number of the chronic mentally disabled outside the institutions.⁴

Statistics available from other sources contribute little to our knowledge of the total numbers of persons with certain disabilities, but they shed some light on the relative frequencies of various types of handicaps. Comparability is impaired though by the selectiveness of the programmes from which the data come and by the use of different concepts and to some degree also classifications.

Regarding the totally and permanently handicapped, some information is available from the medical statistics of applicants for Allowances for Disabled Persons in Canada.⁵ These statistics relate to those persons entering the programme, and not necessarily all those receiving the allowances at a given point of time. They represent, therefore, not a cross-section of the group of people in receipt of allowances. Their characteristics will vary from those of the new applicants because of varying survival rates, changing conditions, and perhaps also changing diagnostic classification and administrative practices. We are dealing here with a highly selected group of people; they are generally in the age group 18 to 64, thus omitting children and the vulnerable group of the aged; they are people who have passed the means test in order to qualify for the allowance; they exclude most of those staying in hospitals, homes for the aged and other custodial institutions.⁶

¹ December 31, 1960, is the latest date for which figures are available.

² Based on Dominion Bureau of Statistics, *Mental Health Statistics, Supplement: Patients in Institutions*, Ottawa: Queen's Printer, 1960, p. 43.

³ 19,590, *ibid.*

⁴ See p. 182.

⁵ Department of National Health and Welfare, *Allowances for the Permanently and Totally Disabled—Medical Statistics—April 1, 1957 to March 31, 1960*, Ottawa: The Department, 1961.

⁶ Those who are pay residents in full or in part are entitled to receive the allowances.

Table 5-14 shows the percentage distribution of the causes of disability among those granted the allowances during the three fiscal years ending March 31, 1958 to 1960.

TABLE 5-14 PERCENTAGE DISTRIBUTION BY CAUSE OF DISABILITY OF PERSONS GRANTED ALLOWANCES FOR DISABLED PERSONS IN CANADA

Fiscal Years Ending March 31, 1958-1960*

Cause Group	1958	1959	1960
I. Infective and Parasitic Diseases.....	6.0	5.0	3.5
II. Neoplasms.....	3.3	4.0	5.0
III. Allergic, Endocrine System, Metabolic and Nutritional Diseases.....	6.7	5.3	3.1
IV. Diseases of the Blood and Blood-forming Organs.....	0.4	0.4	0.3
V. Mental, Psychoneurotic and Personality Disorders.....	23.5	27.5	33.2
VI. Diseases of the Nervous System and Sense Organs†.....	17.4	20.0	20.9
VII. Diseases of the Circulatory System.....	21.0	20.0	17.3
VIII. Diseases of the Respiratory System.....	2.5	2.4	2.7
IX. Diseases of the Digestive System.....	1.5	1.1	0.8
X. Diseases of the Genito-Urinary System.....	0.9	0.8	0.7
XII. Diseases of the Skin and Cellular Tissue.....	0.3	0.4	0.2
XIII. Diseases of the Bones and Organs of Movement.....	10.7	9.3	8.3
XIV. Congenital Malformations.....	1.2	1.1	1.4
XVI. Symptoms, Senility, and Ill-defined Conditions.....	2.6	0.8	0.4
XVII. Accidents, Poisoning, and Violence.....	2.0	1.9	2.2
ALL CAUSES.....	100.0	100.0	100.0

* Based on Department of National Health and Welfare, Research and Statistics Division, *Allowances for the Permanently and Totally Disabled*, Medical Statistics, April 1, 1957 to March 31, 1960, pp. 22-27.

† Generally excludes the blind who are covered by the Allowances for Blind Persons.

These figures do not reflect the actual prevalence of the various causes but only their relative ranking within this particular population group. Nor do small changes over a period of two or three years necessarily indicate definite trends. For certain causes, however, the trend has been one of consistent change either upwards or downwards.

Accounting for an increasing proportion are: Neoplasms; Mental, Psychoneurotic and Personality Disorders; Diseases of the Nervous System and Sense Organs.¹ Mental and related disorders were the leading cause group in all three years, followed in the last year by the increasing proportion of diseases of the nervous system and sense organs, and a decreasing proportion of diseases of the circulatory system.

¹ This group does not include blindness, except for a few isolated cases.

During the same three years the following numbers of blind persons were granted allowances for blind persons:¹

Year	Persons
1957-58	834
1958-59	1,037
1959-60	774

If added to the aforementioned figures for all other disabilities for which allowances were granted, the blind would account for about 10 per cent in the year 1959-60.

The great importance of psychiatric disorders and the diseases of the nervous and sense organs (including blindness) is borne out also by statistics of registered disabilities of adults in British Columbia.² The same source indicates the following as the main causes of disabilities among the registered live cases under the age of 21:

Cause	Per Cent of Total
Mental retardation	18
Strabismus	9
Congenital heart disease	6
Cerebral palsy	5
Impaired hearing and deafness	5
Non-organic speech defects	4
Clubfoot	4

A study of the types of congenital malformations found among newborn children in British Columbia³ disclosed among the most frequent are cleft palate and harelip, malformations of the circulatory system, clubfoot, spina bifida and meningocele. All these handicaps require, to a varying degree, medical and institutional care, often including a wide range of rehabilitation services. They also represent the demand for compensating devices such as prosthetic appliances of an ever increasing variety and complexity.⁴

Inadequate eyesight conditions which can be compensated by the use of spectacles are usually not counted a disease or handicapping condition, yet they are no doubt health defects whose rectification falls under the

¹ Department of National Health and Welfare, *Report on the Administration of Allowances for Blind Persons in Canada, Fiscal Year Ended March 31, 1962*, Ottawa: Queen's Printer, 1962, p. 5.

² This fact stands out though the two series of statistics are not comparable, see Department of Health Services and Hospital Insurance, British Columbia, *Registry for Handicapped Children and Adults, Annual Report 1962*.

³ Doughty, J. H., *Case Finding of Congenital Malformations*, in the above quoted report, pp. 37-50.

⁴ See Chapter 2, Recommendations 113-115.

provision of health services.¹ We have prepared some approximate estimates of the extent of the problems faced in this field based on the frequency of these disorders.

In 1961 the number of blind persons registered with the Canadian National Institute for the Blind was 24,117.² The Canadian Sickness Survey indicates that all permanent impairments of the eye—minor as well as total—amount to about four times this figure.³

Regarding refractive errors only, the Canadian Association of Optometrists estimates⁴ that among the general population 41 per cent do not require vision care, 30 per cent are receiving adequate care, 14 per cent have uncorrected problems, 10 per cent are wearing obsolete or improper corrections, and 5 per cent are uncorrectable. Thus, about 54 per cent of the population require vision aid. This over-all percentage varies from about 20 per cent among school age children to about 90 per cent at age 70.⁵ These figures approach fairly closely the results of a survey in England according to which there are about 44 per cent of the general population there wearing glasses.⁶

According to the same source, about 88 per cent of the 13.2 per cent of the population having eye examinations, require glasses. This would put the number of people needing new glasses or replacements at about 12 per cent of the population annually. The Canadian Sickness Survey⁷ reported only 4 examinations for glasses in every 100 of the population. The Canadian Association of Optometrists estimate that people on the average have their eyes examined every three to four years.⁸

DENTAL HEALTH PROBLEMS

The disorders referred to under this heading are those usually treated by dentists. This sets them apart from other diseases in a way roughly analogous to the separation between the dentist and the medical practitioner. But it is not only the type of service and the training of the practitioner which accounts for the separation (not unlike the traditional separation of mental disease and services from other health problems and services). There also seems to be an attitude towards dental care as something more elective than general health care partly due perhaps to a lack of awareness of its nature,

¹ See Chapter 2, Recommendations 83-94.

² Canadian National Institute for the Blind, Annual Report 1961.

³ See page 205 above.

⁴ *Canadian Association of Optometrists*, brief submitted to the Royal Commission on Health Services, May 1962, Toronto, pp. 25-27.

⁵ *Ibid.*, Exhibit No. 19.

⁶ Gray, P. G., "Who Wears Spectacles" in *The Lancet*, Sept. 22, 1951, p. 537.

⁷ Department of National Health and Welfare and Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Canadian Sickness Survey, 1950-51, Ottawa: Queen's Printer, 1960, p. 192.

⁸ Canadian Association of Optometrists, *op. cit.*, p. 26.

the limited access to care facilities, and their cost. While everyone knows what a bad toothache means, it can often be stopped by the extraction of the tooth or teeth. Once the source of the pain has been removed, the immediate need for treatment subsides, any resulting complications are slow in developing, and the inconvenience of the loss of a tooth or even several teeth is often suffered because of the lack of access to or desire for further treatment.

Statistical information on the prevalence of dental disorders among the general population is limited but available evidence is convincing that dental disease is one of the most frequent health defects found in the community.¹ Most surveys are limited to children in certain areas. Estimates based on such surveys indicate the extent of the problem:

"By the age of 13, according to the National Dental Health Survey, 98 per cent of Canadian children have one or more teeth decayed and 40 per cent of them have lost one or more permanent teeth. Only 13 per cent of the children between seven and 13 years of age have no untreated dental defects; each child has an average backlog of three teeth needing restoration.

"Sixteen per cent of all children and almost 80 per cent of all adults have gingival infections. Between 50 and 70 per cent of the people have malocclusion".²

Of Canadian children between the age of 7 and 13, only 13.2 per cent have no dental defects, and 21.5 per cent no caries defects.³ The existing backlog of untreated caries is, on the average, 3.4 teeth per child up to age 14 and 2.9 teeth per adult.⁴ The following are figures resulting from dental surveys in British Columbia⁵ showing the mean number of carious permanent teeth per child.

Age	Mean Number of Carious Permanent Teeth per Child
5	0.1
7	1.5
9	2.0
11	2.8
13	4.3
15	4.8
Ages 7-15 combined	2.9

¹ "The unnecessary tragedy of dental diseases is one of Canada's gravest health problems", *The Canadian Dental Association*, brief submitted to the Royal Commission on Health Services, Ottawa, 1962, p. 9.

² *Canadian Dental Association, ibid.*, p. 11.

³ *Ibid.*, p. II-5.

⁴ *Ibid.*, p. III-3.

⁵ Department of Health Services and Hospital Insurance, British Columbia Health Branch, Division of Vital Statistics, Special Report No. 52, *British Columbia Dental Health Surveys, 1958-1960, Part III*, pp. 18, 19.

Despite this great need for dental services, the effective demand is very low.¹ The Canadian Sickness Survey shows that in 1950-51 only about one in seven Canadians visited a dentist during a year. The Canadian Dental Association estimates that about one-third of all Canadians receive some dental care in a year.²

There were considerable differences among income groups in the frequency of dental visits.

Income Group	Visits	
	Per 1,000 Population	Per 1,000 Persons Reporting Dental Visits
Low Income.....	163	1,729
Medium Income.....	302	2,076
High Income (lower).....	416	2,195
High Income (upper).....	542	2,520
ALL GROUPS.....	323	2,192

This discrepancy was particularly marked in the case of children under 15. Four times as many children in the high (upper) income group as in the low income group received dental care.³

THE RELATIVE MAGNITUDE OF THE PROBLEMS

Table 5-15 is presented as a model rather than a source of complete information. The basic data were obtained from sources varying greatly in their scope as well as the period covered, leaving some gaps to be filled by rough approximations. Nevertheless, the figures permit us to view disease groups in a broad perspective. The table shows for each of the major diagnostic classes selected, its percentage of mortality and duration of illness from all causes, as well as of the total volume of the selected health services for which data could be obtained.

¹ See Chapter 2, Recommendations 39-57.
² *Canadian Dental Association, op. cit.*, p. IV-2.
³ Department of National Health and Welfare and Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Canadian Sickness Survey, 1950-51, Ottawa: Queen's Printer, 1960, p. 187.

TABLE 5-15 THE MAJOR DIAGNOSTIC CLASSES AND THEIR PERCENTAGE SHARE OF TOTAL ILLNESS AND HEALTH SERVICES, CANADA, ABOUT 1961

Diagnostic Class	Illness				Health Services				
	Deaths	Premature Mortality	Disabling Illness	Non-Disabling Illness	Hospital Separations	Hospital Days	Physicians' Services	Prescriptions	Home Nursing
I. All Infective and Parasitic Diseases.....	1.2	1.8							
Tuberculosis.....	0.5	0.6	1.3	n.a.	0.4	5.1	0.3	n.a.	1.0
II. All Neoplasms.....	17.0	13.7	2.0	1.4	4.5	4.6	5.8	0.3	7.3
Malignant Neoplasms.....	16.8	13.7	0.9	n.a.	2.5	3.6	5.1	0.3	7.0
III. Allergic, Endocrine System, Metabolic, and Nutritional Diseases.....	2.2	1.8	1.3	5.0	2.2	1.8	2.0	7.0	11.1
IV. Diseases of the Blood and Blood-forming Organs.....	0.4	0.3	n.a.	n.a.	0.4	0.3	0.9	2.8	6.8
V. Mental, Psychoneurotic and Personality Disorders.....	0.3	0.5	9.9	n.a.	2.5	38.9	1.7	3.7	0.7
VI. Diseases of the Nervous System and Sense Organs.....	12.1	7.4	6.3	5.6	3.7	5.0	3.9	5.3	11.0
VII. Diseases of the Circulatory System.....	38.8	22.0	9.1	10.6	6.3	7.9	5.2	16.2	11.9
VIII. Diseases of the Respiratory System.....	5.7	7.2	28.0	23.4	13.9	4.9	15.1	16.7	1.5
IX. Diseases of the Digestive System.....	3.7	4.3	6.8	8.6	10.8	5.7	9.6	8.2	3.8
X. Diseases of the Genito-Urinary System.....	2.1	1.5	3.5	5.0	6.9	3.5	8.7	4.4	1.8

XI. Maternity and Complications.....	0.2	0.3	2.5	0.5	18.3	5.7	11.3	3.5	9.2
XII. Diseases of the Skin and Cellular Tissue.....	0.1	0.1	1.6	5.5	2.0	0.9	8.3	4.2	1.6
XIII. Diseases of the Bones and Organs of Movement.....	0.3	0.3	5.7	10.0	2.7	2.9	7.2	4.6	5.5
XIV. Congenital Malformations.....	2.0	6.5	n.a.	n.a.	0.8	0.7	0.3	—	0.2
XV. Certain Diseases of Early Infancy.....	5.1	17.4	n.a.	n.a.	0.4	0.3	1.3	0.2	0.1
XVI. Symptoms, Senility, and Ill-defined Conditions.....	0.9	0.6	8.1	17.0	1.9	0.9	6.6	5.4	4.3
XVII. Accidents, Poisoning and Violence.....	7.9	14.3	5.7	4.4	7.5	4.7	6.7	4.5	3.4
XVIII. Supplementary Class.....	—	—	—	—	13.7	5.2	—	12.5	18.0
TOTAL.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Figure 5-3 shows the same data rearranged to indicate under each heading (mortality, illness, health services) the main causes of each. Thus we find again the circulatory diseases prominent in regard to mortality, but also among the main causes of illness and the selected types of health services shown. The respiratory diseases are the main cause of disabling and non-disabling illness, and they require the largest share of any disease group of physicians' services and prescriptions. The largest proportion of hospital care goes to mental illness whose share in illness is again grossly understated.

The next step is an attempt to show for each diagnostic group its share in the total cost of personal health services. This was done by dividing the total estimated cost for each type of service according to the percentages shown in the foregoing table. Table 5-16 has the further limitation in addition to those applying to Table 5-15, in that it omits the cost of public health services applicable to certain infectious diseases and other conditions. Further it does not include a number of health services such as those of the optometrist, and it assumes that the cost in all cases is proportional to the volume of the services provided. We know, however, that the per diem cost in mental, tuberculosis, and other chronic hospitals is less than that for acute treatment beds, and also that the number of procedures performed by physicians and certain types of prescriptions is not proportional to their cost. Eventually it should be possible to refine this table.

Table 5-16 shows for each of the diagnostic groups the roughly estimated cost of hospital services, physicians' services and prescriptions,¹ as well as the total for these three items. These totals are ranked from the highest to the lowest in Table 5-17. It shows mental illness as accounting for most of the cost,² followed by the respiratory diseases, dental services and circulatory diseases; maternity ranks fourth and it should be noted that newborn care in the hospital is shown in the supplementary class.

The high expenditure for dental services—even though these services are inadequate at the present utilization rate—is noteworthy. These services relate to conditions with no mortality, illness, hospital or nursing care to speak of.

The share of the cost of health services does not, of course, reflect the over-all medical and social importance of a disease or group of diseases. In determining the over-all importance or impact of a disease one must also take into account other effects of illness such as mortality and impaired health. Also a picture for the nation as a whole obscures the problems created for individuals by comparatively rare diseases or impairments such

¹ Number of prescriptions, outside hospital.

² Somewhat overstated as indicated above.

FIGURE 5-3

THE MAIN CAUSES OF ILLNESS AND OF THE DEMAND FOR HEALTH SERVICES (AS % OF TOTAL)

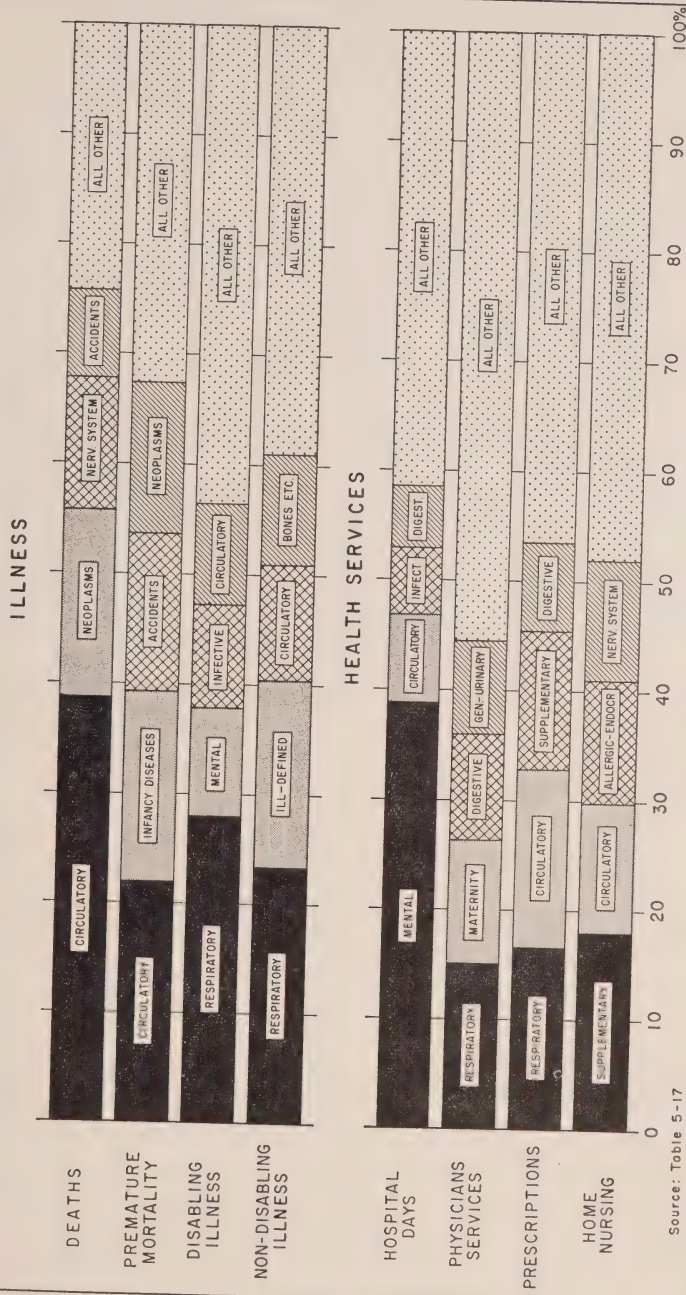


TABLE 5-16 ESTIMATED EXPENDITURES ON SELECTED ITEMS OF PERSONAL HEALTH CARE, BY MAIN DIAGNOSTIC CLASSES, CANADA, 1961*

Diagnostic Class	Hospital Services	Physicians' Services	Prescriptions	Total
	\$ 000,000			
I. All Infective and Parasitic Diseases....	56.3	20.7	.6	77.6
Tuberculosis.....	47.1	1.1	—	48.2
II. All Neoplasms.....	42.5	22.2	.3	65.0
Malignant Neoplasms.....	33.3	19.5	.3	53.1
III. Allergic, Endocrine System, Metabolic, and Nutritional Diseases.....	16.6	7.7	7.8	32.1
IV. Diseases of the Blood and Blood-forming Organs.....	2.8	3.5	3.1	9.4
V. Mental, Psychoneurotic, and Personality Disorders.....	359.4	6.5	4.1	370.0
VI. Diseases of the Nervous System and Sense Organs.....	46.2	14.9	5.9	67.0
VII. Diseases of the Circulatory System.....	73.0	19.9	18.0	110.9
VIII. Diseases of the Respiratory System.....	45.3	57.9	18.5	121.7
IX. Diseases of the Digestive System.....	52.7	36.8	9.1	98.6
X. Diseases of the Genito-Urinary System.....	32.3	33.3	4.9	70.5
XI. Maternity and Complications.....	52.6	43.3	3.9	99.8
XII. Diseases of the Skin and Cellular Tissue.....	8.3	31.8	4.7	44.8
XIII. Diseases of the Bones and Organs of Movement.....	26.8	27.6	5.1	59.5
XIV. Congenital Malformations.....	6.5	1.1	—	7.6
XV. Certain Diseases of Early Infancy.....	2.8	5.0	.2	8.0
XVI. Symptoms, Senility, and Ill-defined Conditions.....	8.3	25.3	6.0	39.6
XVII. Accidents, Poisoning, and Violence.....	43.4	25.7	5.0	74.1
XVIII. Supplementary Class.....	48.0	—	13.9	61.9
Sub-total.....	923.8	383.2	111.1	1,418.1
Dental Services.....	—	—	—	118.8
Sub-total.....	—	—	—	1,536.9
All Other Personal Health Services.....	—	—	—	115.0
TOTAL.....	—	—	—	1,651.9

* Source for Sub-totals, Dental Services, All Other Personal Health Services, and Total: Department of National Health and Welfare, *Expenditures on Personal Health Care in Canada 1953-1961*, Health Care Series, Memorandum No. 16, Ottawa, 1963.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

as, for instance, the heavy burden imposed by cases of cystic fibrosis, certain crippling impairments, or similar conditions. The group of congenital malformations is an example of conditions accounting for a small, though growing, proportion of health services. Nevertheless, Canada faces the requirements of an unprecedented expansion in the field of prosthetic devices, a long-standing need of children and adults with impairments which has been brought into focus by the deformities resulting from the use of thalidomide.

TABLE 5-17 THE RANKING OF BROAD DIAGNOSTIC GROUPS IN TERMS OF THE ESTIMATED COST OF SELECTED PERSONAL HEALTH SERVICES*
(About 1961)

Rank No.	Class No.	Diagnostic Group	Estimated Expenditure \$ millions	Per Cent of Total Expenditure
1	V	Mental, Psychoneurotic, and Personality Disorders....	370.0	24.1
2	VIII	Diseases of the Respiratory System.....	121.7	7.9
3	—	Dental Services.....	118.8	7.7
4	VII	Diseases of the Circulatory System.....	110.9	7.2
5	XI	Maternity and Complications (excl. newborn care)....	99.8	6.5
6	IX	Diseases of the Digestive System.....	98.6	6.4
7	I	All Infective and Parasitic Diseases.....	77.6	5.0
8	XVII	Accidents, Poisoning, and Violence.....	74.1	4.8
9	X	Diseases of the Genito-Urinary System.....	70.5	4.6
10	VI	Diseases of the Nervous System and Sense Organs.....	67.0	4.3
11	II	All Neoplasms.....	65.0	4.2
12	XVIII	Supplementary Class.....	61.9	4.0
13	XIII	Diseases of the Bones and Organs of Movement.....	59.5	3.9
14	—	Malignant Neoplasms.....	53.1†	3.5†
15	—	Tuberculosis.....	48.2‡	3.1‡
16	XII	Diseases of the Skin and Cellular Tissue.....	44.8	2.9
17	XVI	Symptoms, Senility, and Ill-defined Conditions.....	39.6	2.8
18	III	Allergic, Endocrine System, Metabolic, and Nutritional Diseases.....	32.1	2.1
19	IV	Diseases of the Blood and Blood-forming Organs.....	9.4	0.6
20	XV	Certain Diseases of Early Infancy.....	8.0	0.5
21	XIV	Congenital Malformations.....	7.6	0.5
TOTAL.....			1,536.9	100.0

* Includes: hospital services, physicians' services, prescriptions.

† Also included in item 11—All Neoplasms.

‡ Also included in item 7—All Infective and Parasitic Diseases.

SOURCE: Kohn, R., *The Health Status of the Canadian People*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

IMPACT OF ILLNESS AT VARIOUS AGES

We turn now to a brief examination of the extent of ill-health by age groups on the basis of the number or rate of deaths, the life years lost due to premature mortality, disabling and non-disabling illness. We distinguish:

The "under 15" are the children with the hazards peculiar to childhood and receiving paediatric services from physicians and hospitals. The group "15-24" comprises the teenagers and young adolescents. The group "25-44" includes the child-bearing ages for the females. (Some of whom are also included in the previous group.)

The group "45-64" plus the two previous groups completes the working ages and in itself represents an age group significant for the onset of chronic disease.

The "65 and over" is generally the age of retirement.

Deaths

In 1960, the deaths were distributed as follows:¹

Age	Deaths	
	Number	Per Cent
Under 15.....	17,102	12.2
15-24.....	2,498	1.8
25-44.....	8,224	5.9
45-64.....	29,867	21.4
65 +.....	81,987	58.7
ALL AGES.....	139,678	100.0

The absolute numbers of deaths and their distribution indicate the actual volume of death and related illness with a corresponding need for health services. If, on the other hand, we are to compare the relative impact of ill-health at various ages, we will have to relate deaths to number of people in each age group which is done by using the age specific rate.²

Age	Death Rate per 1,000 Population (1960) in Age Group
	Per Cent
Under 15.....	2.8
15-24.....	1.0
25-44.....	1.7
45-64.....	9.7
65 +.....	60.4
ALL AGES.....	7.8

¹Based on Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, pp. 166-167.

²*Ibid.*

Premature Mortality

The life years lost due to deaths before completing the expected life span are distributed as follows.¹

Age	Life Years Lost	
	Number in Thousands	Per Cent
Under 15.....	1,163.5	40.6
15-24.....	130.4	4.5
25-44.....	310.3	10.8
45-64.....	617.2	21.4
65 +.....	652.8	22.7
		100.0
ALL AGES.....	2,874.2	

Disabling and Non-disabling Illness

The following tabulation is based on the Canadian Sickness Survey, 1950-51.

Age	Days of	
	Disabling Illness	Non-disabling Illness
	Per Cent	Per Cent
Under 15.....	26.0	19.1
15-24.....	10.2	8.9
25-44.....	22.2	32.2
45-64.....	23.0	25.0
65 +.....	18.6	14.8
ALL AGES.....	100.0	100.0

These figures indicate how much of the total illness load in Canada is accounted for by the various age groups, whereby it must be borne in mind that the middle age groups include the maternity periods. The high percentage due to illness among children is noteworthy.

¹ Data supplied by the Vital Statistics Section, Dominion Bureau of Statistics.

The following tabulation compares the burden of illness among people within these age groups, by showing the average number of illness days per person, again including maternity periods.¹

Age	Average Number of Days of Illness per Person per Year	
	Disabling	Non-disabling
Under 15.....	10	26
15-24.....	8	24
25-44.....	9	45
45-64.....	16	56
65 +.....	29	76
ALL AGES.....	12	40

People 65 and over are prevented from following their usual activities for over four weeks on the average and are suffering from some non-disabling ailment for about 11 weeks a year.

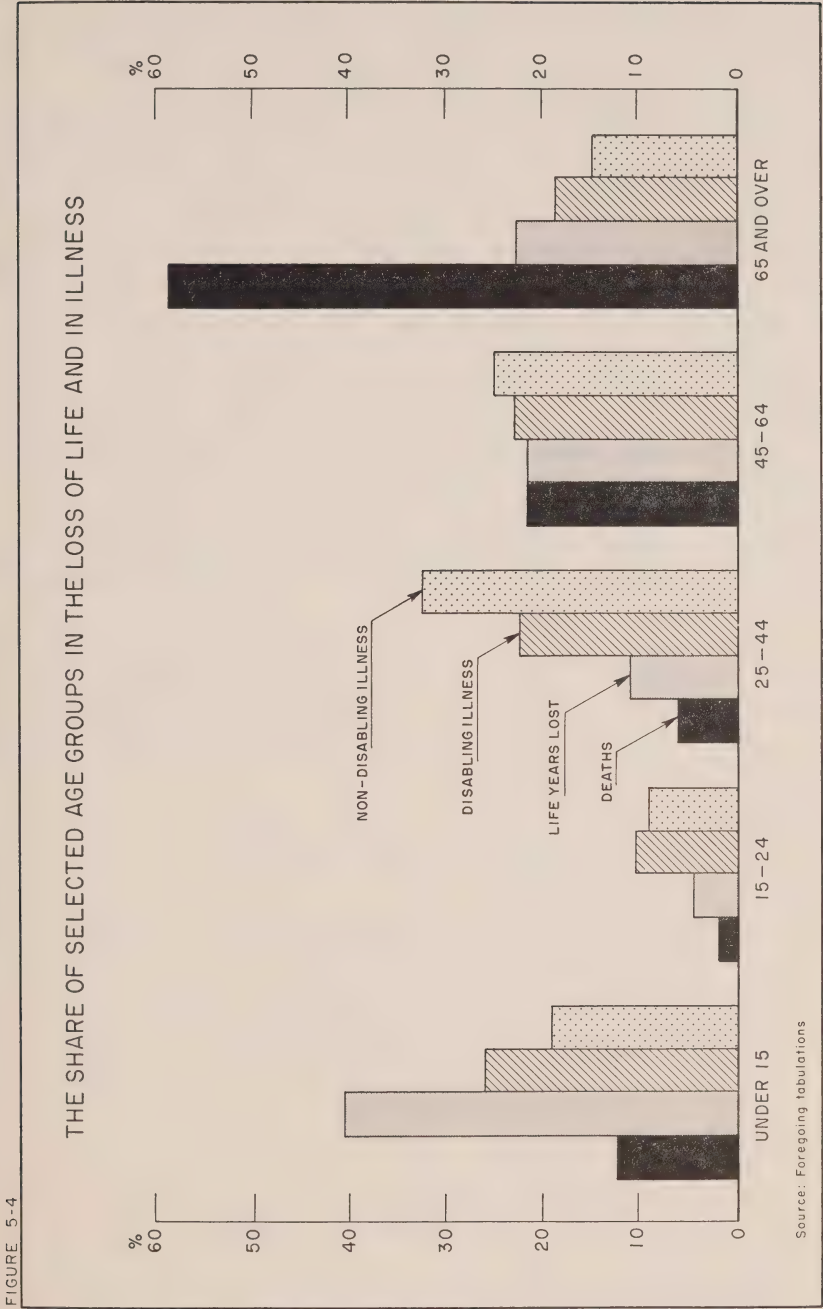
The following chart, Figure 5-4, summarizes these findings. It indicates the expected high share of the old age group in the number of deaths, but it also shows the large proportion of mortality, loss of life, and illness accounted for by those in the childhood ages.

In the middle age groups, 15-44, "illness" includes the periods around childbirth. Allowing for this and particularly also with respect to the two measures of mortality it is obvious that the age group "45-64" sets the stage for many of the health problems of the subsequent age groups. This emphasizes the importance of the "45-64" group for the care of chronic diseases especially in terms of preventive measures, which remains as one of our foremost health problems.

HEALTH PROBLEMS IN THE NORTH

Data for Canada as a whole are aggregates of varying components. The purpose of aggregates and averages is to abstract from individual and local differences, thus obscuring variations which exist. In order to evaluate the national figures more effectively, however, regional differences should

¹ Based on Department of National Health and Welfare, and Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Ottawa: Queen's Printer, 1960, p. 115.



be taken into account where appropriate. For instance, if Canada's infant mortality rate is comparatively high, we may observe that the high national figure is the result of the higher than average experiences in certain regions and it is there that the problem will be found.

Epidemic outbreaks of communicable diseases, for example, are often limited to certain areas. Certain types of cancer or tooth defects can perhaps be linked to certain local conditions. The age-composition of an area will determine the extent of diseases peculiar to certain age groups such as chronic disease among an older population. The most pronounced and most serious regional differences are those resulting from conditions associated with standards of living, sanitation, and health services in general.

Certain regional differences have already been pointed out when discussing such problems as infant mortality. When speaking of regional differences within Canada, we usually refer to provinces or groups of provinces and territories because that is the way the services are organized and statistics compiled. Health problems, however, do not stop at provincial borders and what is said, for instance, for the Northwest Territories will, to a large extent, apply also to the northern parts of the provinces with sparsely populated areas, and people living in less well organized communities than those farther to the south.

The most outstanding regional health problem in Canada is that of her northern regions. There is a wide gap between health standards of this area and those of the rest of the country, and there are peculiar problems besetting the provision of health services. The number of people involved is comparatively small: 24,000 in the Northwest Territories in 1962 and 15,000 in the Yukon.

Their health problems can be briefly summarized in the words of the Commissioner of the Northwest Territories:

"The Eskimo birth rate of 59 per thousand population continued to be one of the highest in the world. The Indian rate was 46 and the white status rate 38. The all Canada rate is 26.9. At the same time, the Eskimo death rate continued to be high at 21 per thousand population—nearly three times the national rate. The Indian rate was 9 per thousand. Fifty-five per cent of the Eskimo deaths were those of infants under the age of one year and 62 per cent of the deaths were those of children under 15 years. The Eskimo infant mortality rate was 193 per thousand live births compared with the Indian rate of 77 and the white status rate of 21. The national rate in 1960 was 27.

"Tuberculosis case-finding surveys were carried out throughout the Territories. The percentage of the population turning out for surveys in some locations, particularly the white status population, was somewhat discouraging but everything possible is being done to bring about an increase. There were 9 deaths from tuberculosis in 1961, three more than in 1960. Of the nine, six were Eskimo and three were Indians.

"Venereal disease continued to be a matter of concern. The gonorrhoea rate was six times the national rate and continued to rise. Although the incidence of syphilis was many times the national rate in 1959 and 1960 there was only one reported case in 1961.

"The chief cause of death continued to be pneumonia. There is a very strong connection between this disease and the factors of low resistance to infection, climate and a low standard of living—particularly poor housing standards".¹

The following tabulation illustrates some of the differences in the health status of the people in the Yukon and the Northwest Territories as compared with Canada as a whole in 1961:²

	Yukon	N.W.T.	Canada
Birth rate	38.1	48.6	26.1
Percentage of births in hospital	92.8	57.1	96.9
Crude fertility rate	186.7	290.0	152.9
Illegitimate births as per-cent of all live births	16.8	12.6	4.5
Standardized death rate	8.5	14.6	7.6
Percentage of deaths occurring in hospital	43.6	26.0	63.0
Average age at death:			
Males	44.8	26.0	59.7
Females	32.4	21.5	63.1 ³
Infant mortality rate	41	111	27
Death rate from infectious diseases	6.8	87.0	8.7
Death rate from respiratory tuberculosis	6.8	39.1	3.7

In a large part of the Northwest Territories "970,000 square miles of tundra" the population density is about one person per 125 square miles. "Getting medical and public health service to them is a challenge to modern logistics and to medical and nursing ingenuity, and the greatest test in Canada of the pioneering spirit, of professional devotion and personal courage."⁴ But while the problem of providing health services is common to all segments of the population, the Indians and Eskimos have health problems beyond those experienced by the people coming there from the south, often for limited periods only.

¹ Annual Report of the Commissioner of the Northwest Territories 1961-62, Northwest Territories, Sessional Paper No. 3, 1962 (Second Session), pp. 8 and 9.

² Dominion Bureau of Statistics, *Vital Statistics 1961*, Ottawa: Queen's Printer, 1963, *passim*.

³ Note the lower age at death of women than of men in the Yukon and the Northwest Territories.

⁴ Northern Health Service, *Health Services for Small Population Groups in Outlying Areas of Northern Canada*, brief submitted to the Royal Commission on Health Services, April 1963, p. 1.

There are, however, problems common to both natives and immigrants: they are the mental health problems resulting from an adjustment to new conditions, vastly different from the accustomed ones. The native, particularly the Eskimo, has to adjust to the changes brought into his life by the newcomers from the south. Those coming to the north have to adjust to a forbidding land and a way of life which to many would be bearable only for a short period of time.¹

The high infant mortality among Eskimos and Indians, the high prevalence of tuberculosis, their susceptibility to other infectious diseases and pneumonia as a major cause of death can all be traced directly to their living conditions.

"Inhuman"—is the way a public health nurse described, in the course of a conversation, the living conditions of the Eskimos in her community. An apt description indeed. To realize this one has to shed the romantic ideas of Eskimo life, derived from children's books and movies, and walk through a settlement of Eskimo tents on a cold September night with the wind and rain lashing against the flimsy tents, babies crying and whimpering, and children and adults alike coughing inside. Outside is the stench of human and dog excretion and of rotten food scraps. The tent houses not only the family but all their belongings and implements.²

This is the environment in which families spent not a week-end (as campers or scouts would in much more substantial tents), but a lifetime, and this is where babies are born and reared and the sick cared for.

Substantial beginnings have been made against the odds of northern logistics in the provision of health services, housing and some means of sanitation.³ Nevertheless, hundreds of families still live under conditions that would not be tolerated elsewhere even in a more moderate climate.

The high infant mortality has been traced to the lack of adequate housing, and it is obvious that the same conditions govern the spread of tuberculosis and other infectious diseases. Medical care can be brought to bear only to alleviate the consequences of the environment. This is a very obvious example of the interrelationship between health and social conditions which calls for a much closer co-ordination between health and other social services.⁴

There are about 12,000 Eskimos in Canada, or perhaps about 2,000 or 3,000 families. Some of them are adequately housed but the majority are not. We firmly believe that remedial action in such related fields which affect

¹ See also Willis, John S., and Martin, Morgan, *Mental Health in Canada's North*, 1962.

² Based on an on-the-spot study of health conditions in a northern area.

³ See also Chapter 8.

⁴ Indian and Northern Health Services, Department of National Health and Welfare and Northern Administration Branch, Department of Northern Affairs and National Resources, *Eskimo Mortality and Housing*, 1960.

significantly health standards can be found. While it is beyond our terms of reference to make recommendations in these related fields, we suggest that considerations of humanity and economics make it imperative for governments to take comprehensive and practical actions in these related fields because without them the serious health problems facing Canadians everywhere but particularly in the North cannot be adequately and effectively resolved.

CONCLUDING SUMMARY

Were we to evaluate the health status of the Canadian people as such and to draw conclusions from the often inconclusive evidence presented in this chapter, we could offer the widely accepted view that the improvements in the mortality and increasing life expectancy during the last decade or decades are signs of improved health. But this is true only if we are justified in equating life with health. One might ask whether our longer life today, beset as it is with chronic illness and exposed to such insidious risks as radiation and carcinogenic matter, is really healthier than the shorter life span of former generations which may have ended more abruptly as the result of some acute infectious disease. We can leave this question, however, to the medical experts and the philosophers as we are not so much concerned with health *per se* as with the services for its improvement. Thus it is our main concern to evaluate the effectiveness of these services as well as to determine the various health problems and the extent to which they affect the demand for services.

In doing so we have found that a comparison of Canadian health indicators with those of other countries establishes Canada's record as being generally well in line with that of other countries with similar standards of living though there remains the need for improvement in the area of infant and maternal mortality. International comparisons also led us to observe Canada's favourable position compared to many parts of the world still exposed to many diseases now controlled here.

We have reviewed the trends and impact of certain diseases and disease groups, attempting to show them in their proper perspective measured by their respective demand for health services. In this regard we have found mental disorder as the most pressing problem, with other chronic diseases figuring prominently. But even the often minor diseases of the respiratory system, by their sheer volume, demand a considerable amount of services. The continuing problems presented by some diseases in the infectious group emphasize the need for continued vigilance and maintenance of effective control measures. Accidents also continue to demand our attention.

Of the particularly vulnerable population groups we have identified those at the two extremes of the life span, the children and especially the aged. We have dealt with the problems of the handicapped and important segments of our northern population.

The extent of dental disorders and vision defects is such that it calls for remedial action to ward off its worst effects.

PART III

THE EXISTING HEALTH
SERVICES COMPLEX

Development of Health Services

The development of health services in Canada is largely the result of the scientific and technological advances in medicine and the allied sciences. Their scope, distribution and utilization have been the result of the interaction of demographic, social, and economic factors affecting the health status and attitudes of the Canadian people.

Our first task is to set out the various elements which constitute our health services. Accordingly in Chapters 7 to 12 we describe the development and complexity of these services. These chapters deal with the existing services, facilities, and costs, and indicate the economic benefits to be derived from the provision of health services. We then turn to consider problems faced in the health field and the various gaps and deficiencies that exist in this area, and we deal with these matters in Chapters 13 to 18.

The history of health and health services in Canada has been fully recorded elsewhere.¹ However, a brief outline of the factors affecting the development of our health services is required if we are to understand the growing concern with their adequacy and operation, which led to the appointment of this Commission.

Canada's health services, baffling today in their multiplicity and diversification, were simple enough in their beginnings. Society then was much less complex with its largely rural character, and an urban element which was as different from the modern city as the idyllic Mariposa of the Sunshine Sketches from today's metropolis.

When sick, one called or saw the physician. The physician's office resembled a parlour rather than a laboratory, with the instruments and medications then available to medical practice assembled in one corner of the room and the text books in another. It was the physician's office, study, and examining room all in one. The physician—one of the two or three professional people in the community—was counsellor as much as professional adviser; his practice of medicine was more art than science. He

¹ Hastings, J. E. F., Mosley, W., *Organized Community Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, and the references in the Introduction.

alone looked after all of the patient's ailments as well as those of the other members of the household. In his role as general practitioner, he practised the skills of the surgeon, obstetrician, paediatrician, psychiatrist, and pharmacist, and he mastered all the knowledge medical science had to offer.

When visiting patients at their home, he would travel by buggy, sleigh or on horseback and patients used the same conveyances. The home usually provided plenty of room for members of several generations of the family, and someone in the household could be counted on to be available for nursing the sick. The mother, grandmother or aunt would have the necessary knowledge to care for the maternity cases in the family, caring for mother and baby, and also many cases of sickness—with or, if necessary, without medical advice and supervision.

Hospitals there were, but they had little to offer that the physician could not do in his office or in the patient's home. Hospitals were used largely to accommodate the hopeless or helpless without giving them much more than a place in which to live out their sickness. By today's standards, they were shelters or asylums for the sick. Looking after the ill and injured had begun to be recognized as something requiring special skill and knowledge.

The physician was the one person who embodied all medical knowledge and skill. Today, those hospitals would probably be considered as mainly custodial institutions. What health care the poor received was dispensed as charity by the physician and the hospital.

During the first half of the nineteenth century the public health agencies came into being when the first boards of health were established to cope with the devastating epidemics of communicable diseases. A serious cholera epidemic broke out in 1832 with the arrival of large numbers of Irish immigrants. The health services of that time were unable to cope with the deluge of sick and dying and the epidemic spread to the people of the colonies. A board of health was set up in Quebec City and a quarantine station at Grosse Isle nearby. "The legislatures of Lower Canada, Nova Scotia, New Brunswick, Upper Canada, and Newfoundland passed legislation in 1832-33 for the establishment of local boards of health in an effort to control the outbreak."¹ Typhus fever broke out in 1847 and cholera reappeared in 1849. This resulted in the establishment of a central board of health. Serious cholera epidemics again occurred in 1854 and 1865 and other local boards were set up. "Thus, at the time of Confederation in 1867 the main problems of the public health in Canada were the recurring epidemics of communicable diseases, such as cholera, typhus and smallpox."² In the latter part of the last century the discoveries of Pasteur led to measures for

¹ *Ibid.*, Introduction.

² *Ibid.*

the control and prevention of communicable diseases so that by the early decades of the present century substantial progress had been made in controlling epidemics. Changes occurred in hospital care. The discoveries of Semmelweiss, Lister, and Pasteur foreshadowed our present day aseptic hospital techniques. Surgical and anaesthetic techniques were greatly improved thereby lessening the hazards associated with their use. More hospitals were built in the new western provinces. "Many were still operated by religious orders or on a lay, voluntary basis but increasingly many were built and operated by municipalities or by a combination of municipalities, as union hospitals."¹

Dentistry became an organized and licensed profession. In 1868 the Royal College of Dental Surgeons was incorporated with the functions of teaching and licensing. In 1875 the first dental school was established in Canada under the auspices of the Royal College of Dental Surgeons.²

Nursing developed into a skilled profession. In 1873 the first hospital school of nursing was begun at the General and Marine Hospital in St. Catharines, Ontario.³

In the following decades medicine participated fully in the rapid scientific progress which extended the field of medical knowledge continuously, requiring the practice of medicine to be subdivided into an increasing number of specialties. At the same time, science provided the physician with an ever widening range of technical equipment which supplemented and partially supplanted what was once the art of healing. Physician and patient alike had at their disposal a more effective means of communication and transportation. A host of technical skills entered the field of health care. Hospitals were equipped with highly complex equipment and staffed by a wide range of technicians. Science provided more effective means to combat disease. This, in turn, changed the prevailing health problems and disease patterns. Government activities in the health field, at the local, provincial and national levels, increased. Voluntary organizations entered the field with the purpose of filling existing gaps in the supply of services and funds.

As Canadian society became increasingly industrialized, urbanized, and wage-earning, demands for health services rose. As these services grew more effective their costs increased. Rising levels of real incomes made it possible to meet some of the higher cost, but they also contributed to a growing awareness of, and the demand for services. The problems of providing for the uncertain risks of the cost of sickness are similar now to what they were in England in the late 18th and 19th century. Here, as in the friendly societies there, voluntary prepayment had some early beginnings going back

¹ *Ibid.*

² Paynter, K. J., *Dental Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

³ Hastings, J. E. F., *op. cit.*, Introduction.

over 300 years.¹ During the last twenty years or so it has had wider application first to hospital services mainly in the form of the Blue Cross plans, and then to medical care. Governments have gradually assumed a greater role in this field, and this culminated in the Hospital Insurance and Diagnostic Services Act in 1957. This was followed by plans for medical care insurance in some of the provinces. As far back as 1928 the House of Commons adopted a motion to the effect that "the Select Standing Committee on Industrial and International Relations be authorized to investigate and report on insurance against unemployment, sickness and invalidity".² The question of health insurance was thoroughly investigated by the Advisory Committee on Health Insurance whose report was released shortly after the completion of the Beveridge Report in England in 1942. Both reports reflected the yearning for security in the post-war world borne of the sufferings of depression and war. These developments culminated in the introduction of the National Health Grants Programme in 1948, and the Hospital Insurance and Diagnostic Services Act in 1958. Assistance programmes were collated to provide pensions for certain selected groups of disabled people, and free medical care was made available to various groups of the population such as those needing public assistance, veterans and members of the armed services. Apart from assisting in the financing of health services, however, some governments have long ago gone beyond the field originally defined as public health as opposed to personal health services. They have provided services for diseases whose cost ordinarily would be beyond the means of most citizens: tuberculosis, mental illness, and cancer are examples.

One way of looking at our overall health resources today, is to consider what is available to a unit of say, 100,000 Canadians, in terms of health workers and health facilities.

Standing at the apex of the phalanx of health workers are the physicians and surgeons and to serve this unit of 100,000 Canadians there are 1,150 physicians available.³ These include both the general practitioners and the specialists. The latter group is qualified by advanced training and certified by the Royal College of Physicians and Surgeons of Canada, as well as by the Collège des Médecins et Chirurgiens de la Province de Québec. Some of these specialists groups and the number for each 100,000 people are as follows:⁴

General Surgery	9.16	Psychiatry	3.03
Internal Medicine	7.58	Radiology	2.86

¹ See Chapter 10.

² *Health Insurance*, report of the Advisory Committee on Health Insurance appointed by Order in Council, P.C. 836, dated February 5, 1942, Ottawa: King's Printer, 1943, p. 68.

³ See Chapter 7. The data are for 1961, except where otherwise indicated.

⁴ Certified specialists only, see Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter IV, Table 4-40.

Obstetrics and Gynaecology.....	3.93	Pathology	1.34
Ophthalmology and Otolaryn-		Orthopaedic Surgery	1.21
gology	3.74	Urology	1.02
Paediatrics	3.03	Dermatology	0.69

But these are only some of 21 certified specialists with more still being added from time to time.

For most patients the general practitioner serves as the first line of defence, and therefore the initial contact. Access to other health services takes place frequently on his referral or recommendation, including referral to specialists, admittance to hospital, or simply a pharmaceutical prescription. But in certain areas, the general practitioner may be by-passed by a number of patients, and for different reasons. Some individuals able to pay the cost, now use the specialist in internal medicine as the family physician for the adults, and the paediatrician for the children. Maternity patients go directly to obstetricians, while other patients select eye specialists, ear, nose and throat specialists and others, again without referral. Further, many people go directly to optometrists. In addition there has been a substantial increase in the volume of pharmaceuticals purchased without prescription.¹

To select a specialist implies, of course, that the patient has made a personal diagnosis of his own condition and, for many obvious symptoms—a foreign body in the eye, an ear-ache, a broken leg, and advanced pregnancy—there is little likelihood of error. For many others, however, the self-selection of a specialist can only result in at least one unnecessary visit if the specialist decides that the condition is not, as the patient thought, “in his field”.

This rising trend towards direct consultation of the specialist is a reflection of a more educated demand on the part of the public. As a result, for a substantial proportion of Canadians, the family doctor who delivered the baby, set the bone, removed the tonsils, and gave comfort where he could do no more, has become a good deal less important.

The range of knowledge and skill represented by the developing specialties is, indeed, impressive. But these, like the front-line troops, are only part of the health army. For, in addition, our unit of 100,000 people has available, 32.2 dentists,² 33.4 nurses,³ 49.4 pharmacists,⁴ 4.1 dietitians, 3.8 physiotherapists, 0.8 occupational therapists, 13.8 radiological technicians and 21.2 laboratory technicians.⁵

¹ See Chapter 9.

² Based on Table 13-10.

³ Based on Table 13-25.

⁴ Ross, T., *Pharmacist Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964. Based on Table 2:A:I.

⁵ Based on Table 7-26. These data are for 1960, for personnel in general hospitals.

These are the field personnel. There are others in hospitals, of course, providing food services, housekeeping, and laundry services.

The facilities are also numerous. Our unit of 100,000 has available to it a total of 1,075 hospital beds,¹ categorized as follows: 630 general hospital beds; 390 beds in hospitals for the mentally ill; 65 beds for tuberculosis care. There is also one large out-patient department.

It is possible that this community of 100,000 will also have rehabilitation facilities, home nursing services and perhaps as many as a dozen or so voluntary agencies providing health care or supporting services.

Nor is this all, for there are important industries providing drugs, laboratory equipment, X-ray equipment, other hospital equipment, surgical instruments and supplies.

The position of the health industry in our economy may be illustrated by the fact that the number of those employed in it not only has grown² but grown much more rapidly than the labour force as a whole.³ Six per cent⁴ of our Gross National Product is attributable to this "industry", and 4.3 per cent of the jobs provided.⁵ Moreover, in addition to the paid workers, there are thousands of voluntary workers in hundreds of voluntary associations, hospital auxiliaries, and the like.

This brief perspective of the development of the modern health services should be considered in conjunction with what has been said in the foregoing chapters about the changes in the concepts of health and health services,⁶ in income and demographic structure,⁷ and in the health status.⁸ Only thus can we fully understand the proliferation of our health services as they are today. It will, at once, assist us to see and appreciate the changes that have taken place as well as the apparently unchanging traditions from which these services have originated. Both these aspects are important in the assessment of the present situation which we discuss in this part of the Report, as well as in the planning for the future to which Part IV is devoted. At both these stages of our investigation we concern ourselves with the two main components making up our health resources: personnel and physical facilities. In

¹ Based on Table 8-1. These data are for 1960.

² From 68,000 in 1931 to 281,000 in 1961. See Table 12-1.

³ It accounted for 1.9 per cent of Canada's labour force in 1931, and for 4.3 per cent in 1961, with a trend rate growth of 6 per cent in 1961, compared with a rate of 2 per cent for the existing labour force. See Table 12-1.

⁴ In 1961, total health expenditures amounted to \$2,228.7 million, of which \$177.8 million was spent on capital facilities. See Table 11-7.

⁵ This proportion covers persons directly employed in the health industry. The proportion would be considerably greater if persons employed indirectly, e.g., construction workers building hospitals, were included.

⁶ See Chapter 3.

⁷ See Chapter 4.

⁸ See Chapter 5.

this analysis we will keep in mind that the foregoing developments have resulted in a fundamental difficulty.

“The paradox of the scientific and technological revolution is that it has diminished relatively the capacity of the individual doctor to meet man’s health care needs at the same time as it has vastly increased the capacity of medicine as a whole to do so. . . . Circumstances are turning the provision of health care into the work of an interdependent team with interdependent facilities. . . . This specialization of function is both necessary and inevitable but it has also created problems and is an important root of many of the issues which today are faced in the provision of health services.”¹

¹ Hastings, J. E. F., *op. cit.* Introduction.

Health Manpower

MEDICAL PROFESSION

The actual number of active physicians in a particular year is determined by the number practising at the beginning plus the balance between the inflow and outflow of medical personnel. The inflow consists of the number graduating from medical schools, immigrants, and foreign physicians in temporary residence, plus those who re-enter the profession after a period of withdrawal from active practice for study or other reasons. The outflow includes physicians who emigrate, die or withdraw from active practice. The actual number of physicians, while of vital importance in estimating the present and future supply of physicians, cannot be considered alone for such an estimate. It must be accompanied by an appraisal of the actual utilization of medical manpower, its geographic distribution and professional specialization.¹

Population-Physician Ratio

The supply of physicians is usually measured in terms of the population-physician ratio: the total population divided by the number of qualified physicians which gives the average number of people per physician. This ratio, although often used, does not indicate the volume of medical services rendered since it does not reflect the nature, scope and quality of the physician's work. Nor does the ratio allow for the social, economic, and physical characteristics of the population served. Even historical comparisons of the population-physician ratio yield limited results largely because of the many changes that do take place in the provision and quality of medical services over time: improved diagnostic methods, a greater use of new and better equipment, more hospitals and other facilities, the increasing employment of a variety of paramedical personnel, plus improvements in transportation which have made for easier access of patient to physician and physician to patient. All these improvements in the methods and techniques

¹ Estimates relating to the future supply of physicians in Canada are contained in Chapter 13.

of medical practice have combined to enable the physician to provide more service today than he did in the past. These qualifications suggest that the population-physician ratio should be used with caution. It can serve as a rough guide in comparisons of the supply of physicians as between provinces and regions, and over a period of time provided changing conditions are taken into account.

TABLE 7-1 POPULATION-PHYSICIAN RATIO, CANADA, 1901-1961

Year	Active Civilian Physicians	Population ^a	Population-Physician Ratio
		('000)	
1901.....	5,475	5,324	972
1911.....	7,411	7,191	970
1921.....	8,706	8,776	1,008
1931.....	10,020	10,363	1,034
1941.....	11,873 ^b	11,490	968
1951.....	14,325	13,984	976
1961.....	21,290	18,238	857

^a Exclusive of Yukon and Northwest Territories until 1960.

^b The 1941 figure includes 1,150 Armed Forces' physicians.

SOURCE: 1901 to 1961, Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2, and Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. I, Part 1, Ottawa: Queen's Printer, 1963, p. 6-1.

Table 7-1 indicates that the Canadian population-physician ratio has improved steadily over the last three decades with special conditions prevailing during the war years.¹ But as Table 7-2 shows there was wide variation in the provincial ratios between 1911 and 1961. Since 1951 all provinces shared in the improvement, with Ontario and British Columbia showing consistently more favourable ratios than the other provinces.

In making international comparisons of population-physician ratios the differences in the organization of medical care in various countries should be kept in mind. The most recent comparable data shown in Table 7-3 are for 1959. In that year, twelve of the countries mentioned had a ratio better than our own, and this despite the fact that, as already indicated in Table 7-1, our ratio had improved significantly, particularly since 1951.

Several of the countries mentioned in Table 7-3, and particularly the United Kingdom, contributed to our supply of physicians, and thereby depleted their own. How long this country can expect other nations to pay for the education of physicians which we require is a matter which must

¹ Deferred retirement of physicians brought the ratio down temporarily and this accounts in part for 968 shown in 1941 and 976 shown in 1951.

TABLE 7-2 PROVINCIAL POPULATION-PHYSICIAN RATIOS, 1911-1961

Province	1911	1921	1931	1941	1951	1961
Newfoundland.....	—	—	—	—	2,524	1,991
Prince Edward Island.....	1,306	1,309	1,397	1,418	1,342	1,149
Nova Scotia.....	1,206	1,147	1,153	1,350	1,094	1,044
New Brunswick.....	1,253	1,448	1,517	1,693	1,445	1,314
Quebec.....	1,003	1,065	1,046	1,054	990	853
Ontario.....	828	848	872	903	857	776
Manitoba.....	1,065	1,095	1,051	1,108	926	823
Saskatchewan.....	1,298	1,445	1,579	1,700	1,278	973
Alberta.....	1,014	1,073	1,256	1,320	1,118	982
British Columbia.....	945	862	952	1,010	847	758
CANADA.....	970	1,008	1,034	1,072	976	857

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

TABLE 7-3 POPULATION-PHYSICIAN RATIOS, CANADA AND SELECTED COUNTRIES, 1959

Country	Population Per Physician
Italy.....	620
Austria.....	620
New Zealand.....	700
Germany: Federal Republic.....	730
Switzerland.....	740
United States of America.....	790
Belgium.....	800
Denmark.....	830
Australia.....	860
Norway.....	900
Netherlands.....	900
Luxembourg.....	910
Canada.....	920
France.....	950
England and Wales.....	960
Spain.....	1,000
Sweden.....	1,100
Portugal.....	1,300
Finland.....	1,600

SOURCE: World Health Organization, *Annual Epidemiological and Vital Statistics 1959*, Geneva: the Organization, 1962, pp. 654-659.

concern us. While Canada will continue to welcome well qualified physicians from abroad, this country should be put in a position which will enable it to train the physicians required to maintain an adequate standard of medical care for this nation¹ and also contribute to assisting the less developed nations in improving their health standards.²

Graduates of Canadian Medical Schools

The number of qualified physicians available to meet the demand for medical services at a particular point in time depends to a large extent on the number of physicians graduating from medical schools. Canada has twelve such schools which have produced 14,146 medical graduates since 1944 or an average of 785 physicians per annum. As indicated by the following table, the three medical schools in the Province of Quebec, Laval, Montreal and McGill graduated 38.2 per cent of the graduates between 1945 and 1962, while the four schools located in Ontario graduated 36.8 per cent during the same period. The medical schools in these two provinces, then, provided 75 per cent of the medical graduates between 1944 and 1962.

TABLE 7-4 NUMBER AND PER CENT DISTRIBUTION OF GRADUATES OF CANADIAN MEDICAL SCHOOLS, BY SCHOOL, 1944-45 TO 1961-62

Medical Schools	Number of Graduates	Per Cent of Total	Annual Average Output Per School	Per Cent of Total Annual Average Output
Dalhousie.....	847	6.0	50	5.9
Laval.....	1,869	13.2	104	12.1
Montreal.....	1,616	11.4	90	10.6
McGill.....	1,924	13.6	107	12.5
Ottawa.....	544	3.8	45	5.3
Queen's.....	891	6.3	52	6.1
Toronto.....	2,763	19.5	154	18.0
Western Ontario.....	1,019	7.2	57	6.7
Manitoba.....	1,140	8.2	63	7.4
Saskatchewan.....	181	1.3	30	3.5
Alberta.....	894	6.3	50	5.9
British Columbia.....	458	3.2	51	6.0
TOTALS.....	14,146 (785 annual average)	100.0	853	100.0

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 3.

¹ Further discussion of the manner in which medical schools can supply the future requirements for physicians is contained in Chapter 13.

² Chapter 2, Recommendation 145.

Increasing technical complexity makes it more difficult for medicine to compete for talent with other professions, both old and new. It must compete for prestige and economic standing with other fields of endeavour, but the high cost of medical education, the relative lack of fellowships and bursaries, and the minimum of seven years required to complete medical training when compared with other types of professional education, hinders the recruitment of suitable candidates for medicine.¹ Provincial licensing bodies, provincial governments, and the faculties of medical schools have emphasized these factors in their recommendations to this Commission² and they have been examined in detail in a study undertaken for us.³

Physician Migration

A significant characteristic of the composition of Canadian medical manpower is the large proportion of immigrant physicians in the post-war years. This has been a period of rapid and substantial population growth, and an increased demand for medical services which stemmed, in part, from an increase in real income due to the rapid post-war economic growth. The increase in demand required a greater number of physicians than Canadian medical schools could supply, and the immigration of physicians helped to fill the gap.

The migration of Canadian physicians is shown in Table 7-5. A total of 4,652 physicians came to Canada in the period 1946 to 1961. Slightly less than half that figure left Canada for the United States leaving a net balance of 2,339. The number of physicians leaving Canada for countries other than the United States is not known but it may be considerably smaller. When we consider the number of physicians immigrating from, and emigrating to the United States there remains a net loss of 1,842. A substantial loss indeed.

Between 1953 and 1961 a total of 3,815 immigrant physicians entered Canada, of which 1,764, or just over 46 per cent, came from the United Kingdom, and 471, or just over 12 per cent, from the United States. In the period 1950 to 1960 nearly 15,000 physicians were registered in Canada.

¹ For a more detailed discussion of the problem of recruitment and the relative decline in medical student enrolment see Chapter 13.

² *The Canadian Association of Medical Students and Interns*, brief submitted to the Royal Commission on Health Services, Ottawa, March 20, 1962, p. 2.

College of Medicine, University of Saskatchewan, brief submitted to the Royal Commission on Health Services, Regina, January 25, 1962, p. 5.

The College of Physicians and Surgeons, Province of Alberta, The Canadian Medical Association, Alberta Division, and The Faculty of Medicine, University of Alberta, briefs submitted to the Royal Commission on Health Services, Edmonton, February 1962, p. 60.

Faculty of Medicine, University of Toronto, brief submitted to the Royal Commission on Health Services, Toronto, May 14, 1962, p. 6.

³ MacFarlane, J. A. *et al.*, *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 9.

TABLE 7-5 MIGRATION OF PHYSICIANS INTO AND OUT OF CANADA, 1946-1961*

Year	Immigration		Total	Emigration to U.S.A.	Difference Between Immigration and Emigration	Net Loss to U.S.A.
	From U.S.A.	From Other Countries				
1946.....	—	56	56	—	56	—
1947.....	—	81	81	—	81	—
1948.....	—	95	95	—	95	—
1949.....	—	78	78	—	78	—
1950.....	—	68	68	260	-192	-260
1951.....	—	166	166	173	-7	-173
1952.....	—	293	293	186	107	-186
1953.....	55	347	402	105	297	- 50
1954.....	39	272	311	135	176	- 96
1955.....	33	300	333	127	206	- 94
1956.....	29	386	415	96	319	- 67
1957.....	46	589	635	265	370	-219
1958.....	52	342	394	179	215	-127
1959.....	66	373	439	229	210	-163
1960.....	84	357	441	262	179	-178
1961.....	67	378	445	296	149	-229
TOTAL.....	471	4,181	4,652	2,313	2,339	-1,842

*Data for the period 1946 to 1952 have been estimated by the Department of Citizenship and Immigration.

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

Of this number about one-third were foreign medical graduates. This heavy dependence on foreign-trained physicians becomes even more striking when we consider that as a percentage of Canadian medical graduates, the graduates of foreign medical schools who were new registrants between 1950 and 1960 rose from 24.8 to 60.4. The heavy inflow of immigrant physicians has helped to some extent to meet the increased demand for medical services, but this demand has not been met fully due to a number of factors. Among them is the continued emigration of Canadian-born and Canadian-trained physicians to the United States. As of April 1962 there were 3,125¹ of these physicians practising in the United States, and approximately 15 per cent of the current medical manpower in Canada. Seen in terms of the output of our own medical schools, this is equivalent to the graduates of all the present medical schools for a four-year period.

¹ Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

In addition to the export of professional manpower, Canada trains United States physicians. In April 1962 there were 1,781 physicians practising in the United States who were born in that country, but who received their basic medical education in Canada.¹ To show the full extent of medical training here for practice in the United States, this total must be increased by an additional 456 physicians who were trained in Canada, but not born here, as well as 356 physicians who were trained here, but whose country of birth outside Canada is not known.²

To balance the picture of the extent to which Canadian medical schools train physicians for practice in the United States we must look at the extent to which United States facilities are used to train Canadian physicians. Table 7-6 indicates that the number of Canadian interns and residents trained in the United States has remained substantial since 1954.

TABLE 7-6 CANADIAN PHYSICIANS TRAINING IN UNITED STATES HOSPITALS, 1954-1962*

Year	Interns	Residents	Total
1954-55.....	—	—	520
1955-56.....	44	540	584
1956-57.....	60	516	576
1957-58.....	66	469	535
1958-59.....	50	513	563
1959-60.....	52	487	539
1960-61.....	75	583	658
1961-62.....	67	659	726

*Non-immigrant status.

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2, Table 2-17.

Death and Retirement of Physicians

Estimates of the available Canadian medical manpower must take into account the death and retirement rates of physicians. Physicians, like the rest of us, have an increasing life span; their average age at death increased from 60.8 years in the period 1926-1930 to 66.4 years between 1956 and 1961.³ Their death rate, however, appears to be slightly higher. Data available for the period 1952 to 1961 indicate an average annual death

¹ *Ibid.*

² *Ibid.*

³ *Ibid.*

rate per 1,000 physicians of 14.6 compared with 13.4 for the male population 20 years of age and over. These data suggest that our supply of physicians is reduced by 1.5 per cent annually. In other words, about 300 physicians will be required in the years to come to take the place of those who have died.¹

Apparently most physicians do not like to retire. Some may retire partially, or temporarily, or others may undertake some other activity. Furthermore, some physicians, although inactive in their profession continue to register with their professional licensing body. For these reasons it is difficult to estimate retirement rates. There is, however, some evidence suggesting that of the total number of physicians about 6 per cent are retired.²

Sources of Supply of Physicians

From 1959 to 1960 the number of active civilian physicians rose from 19,800 to 20,517, or by 717.³ This of course represents the net balance between the inflow and outflow of physicians during this period, and is shown in the following tabulation.

In 1960 there were 766 Canadian graduates⁴ and 521 immigrant physicians⁵ licensed.

Information on how the number of physicians was reduced is less complete. A total of 312 physicians left Canada. Of these 262 immigrated to the United States and about 50⁶ to Great Britain. How many physicians emigrated to other countries is not known, but believed to be insignificant. Similarly the number of retirements is not known. In 1961, 309 physicians died. However, not all of these represent *active* physicians, as a certain proportion would have retired before death. We do not have estimates of the number of physicians re-entering active practice, after, for example, a period of study or a sojourn in the United States. To the extent that physicians did re-enter active practice, deaths, retirements and emigration to other countries have been underestimated.

What the data show is that the principal source of supply of physicians in Canada is the medical school. In 1960, for example, Canada's net

¹ *Ibid.*

² *Ibid.*

³ The net addition could not be found between the period 1960-61 because the 1961 figure represents the census count on June 1, of that year. However, statistics on immigration, emigration and death are provided only for the 12 month span.

⁴ Total number of graduates in 1960 was 863. From this figure 97 foreign medical graduates should be subtracted, as it is believed that the majority return to their country of origin. Judek, S. *op. cit.*, Chapter 3. To the extent, however, that some of these students do remain in Canada, this source of supply is underestimated.

⁵ This figure does not correspond to the number of immigrant physicians provided by the Department of Citizenship and Immigration, as their records are based on "intended" occupation at time of entry into Canada, rather than occupation actually followed. Thus a number of years may pass before the "Immigrant Physician" sets up active practice.

⁶ MacFarlane, J. A., *op. cit.*

gain of physicians from abroad was a little over 200 equivalent to about one-quarter of the number of Canadians graduating as physicians in this country.

Reliable and current information on the sources of supply of physicians is essential in planning the future requirements of medical manpower in Canada. The inadequacy and incompleteness of available statistics on this subject, indicated above, underlines the urgency for taking remedial steps in this area.¹

**TABLE 7-6A SOURCES OF SUPPLY OF
PHYSICIANS, CANADA, 1959-1960**

	+	-
Number of Graduates (Canadian).....	777	
Immigration (Registrants of Foreign Medical Schools).....	521	
Emigration—To United States.....		262
To Great Britain.....		50
Deaths and Retirements.....		269*
TOTAL	1,298	581
Number of Physicians—1959 19,800 1960 20,517		
Net increase.....	717	

*Estimated.

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapters 2 and 3.

Geographic Distribution of Physicians

In 1961 nearly 70 per cent of our population lived in urban areas. This concentration is sustained by a similar location of services including medical and other health services. However, the concentration of physicians within urban areas is proportionately greater than that of the general population. Between 1951 and 1962 the proportion of physicians practising in urban centres of 10,000 or more population rose from 73.2 per cent to 85.8

¹ For recommendations on health statistics of which data on medical manpower are an integral part, see Chapter 2, Recommendation 186-189.

per cent. In the same period the general population located in these centres increased from 48.2 per cent to 58.7 per cent.¹

Table 7-7 shows that the disproportionate distribution of physicians becomes particularly apparent in metropolitan areas. The high concentration of physicians in these areas does not fully reflect the availability of medical services since many of these men are engaged in teaching, full- or part-time research, hospital duties, and administrative tasks. In addition, many physicians look after patients from the surrounding rural areas and do consulting work for these areas. Even allowing for these factors, existing evidence suggests that there is a disproportion of physicians in the larger urban areas of Canada.

Rural areas not only have proportionately fewer physicians than urban centres, but rural physicians are usually older. This implies a reduced capacity for service as well as higher retirement and death rates of rural compared with urban physicians. Several factors lure the newly fledged professional to the urban areas rather than the rural: the less adequate diagnostic and treatment facilities in rural areas, lack of professional contacts, generally lower standards of living and the lack of amenities.

TABLE 7-7 ACTIVE CIVILIAN PHYSICIANS LOCATED IN METROPOLITAN AREAS FOR PROVINCES AND CANADA, 1961

Province and City	Metropolitan Areas*					Provincial Population- Physician Ratio	Provincial Non-metro- politan Population- Physician Ratio
	Population		Physicians		Popu- lation- Physi- cian Ratio		
	Number	Per cent of Prov.	Number	Per cent of Prov.			
NEWFOUNDLAND St. John's.....	90,838	19.8	179	51.7	763	1,991	3,306
NOVA SCOTIA Halifax.....	183,946	25.0	338	47.9	544	1,044	1,503
NEW BRUNSWICK Saint John.....	95,563	16.0	135	29.7	708	1,314	1,570
QUEBEC						853	1,696
Montreal.....	2,109,509	40.1	3,728	60.5	568		
Quebec City.....	357,568	6.8	683	11.1	524		
Sherbrooke.....	70,253	1.3	105	1.7	669		
Trois-Rivières.....	86,659	1.6	97	1.6	893		
Total.....	2,623,989	49.8	4,613	74.9	569		

¹ Judek, S., *op. cit.*, Chapter 4.

TABLE 7-7 ACTIVE CIVILIAN PHYSICIANS LOCATED IN METROPOLITAN AREAS FOR PROVINCES AND CANADA, 1961—*Concluded*

Province and City	Metropolitan Areas*					Provincial Popu- lation- Physician Ratio	Provincial Non-metro- politan Population- Physician Ratio
	Population		Physicians		Popu- lation- Physi- cian Ratio		
	Number	Per cent of Prov.	Number	Per cent of Prov.			
ONTARIO						776	1,201
Hamilton.....	395,189	6.3	520	6.5	760		
Kingston.....	63,419	1.0	220	2.7	288		
Kitchener- Waterloo.....	154,864	2.5	185	2.3	837		
London.....	181,283	2.9	433	5.4	419		
Ottawa City and Eastview.....	292,761	4.7	577	7.2	507		
Oshawa.....	80,918	1.3	91	1.1	889		
Sudbury.....	110,694	1.8	129	1.6	858		
Toronto.....	1,824,481	29.3	3,157	39.3	578		
Windsor.....	193,365	3.1	280	3.5	691		
Total.....	3,296,974	52.9	5,592	69.6	590		
MANITOBA						823	1,913
Winnipeg.....	475,989	51.6	887	79.2	537		
SASKATCHEWAN						973	1,650
Regina.....	112,141	12.1	235	24.7	477		
Saskatoon.....	95,526	10.3	281	29.5	340		
Total.....	207,667	22.4	516	54.2	402		
ALBERTA						982	1,593
Calgary.....	279,062	21.0	331	24.4	843		
Edmonton.....	337,568	25.3	576	42.5	586		
Total.....	616,630	46.3	907	66.9	680		
BRITISH COLUMBIA						758	1,229
Vancouver.....	790,165	48.5	1,352	62.9	584		
Victoria.....	154,152	9.5	231	10.7	667		
Total.....	944,317	58.0	1,583	73.6	597		
CANADA†.....	8,535,913	47.2	14,690	69.4	581	855	1,474

*Metropolitan areas except Regina, Saskatoon and Ottawa, which excludes Hull and other cities within the Province of Quebec, metropolitan areas include suburban parts and cities.

†Excludes Yukon and Northwest Territories and Prince Edward Island.

SOURCE: Data supplied by Dominion Bureau of Statistics, Census Division, Occupation and Employment Section.

Specialization

Some of the most remarkable discoveries of the last hundred years have been directly or indirectly applicable to the scientific practice of medicine; the pace at which medical knowledge is translated into medical practice has quickened, and the repercussions on the organization of medical practice have been numerous. With increasing knowledge, specialization has grown and resulted in the emergence of a variety of skills. In modern society we are very much aware of this impact on academic teaching and research, as well as medical research and practice; each new discovery means increased knowledge in smaller and smaller fields of activity so that today one man can successfully master the detailed knowledge of only a small area. Formal specialist medical training started in Canada in 1929; today half of Canada's medical graduates are entering specialties and of the total civilian physicians in Canada in 1961, 37.3 per cent were certified and 13.8 per cent non-certified specialists.¹

The following table indicates the growth of specialist practice.

TABLE 7-8 SPECIALIST CERTIFICATES GRANTED BY THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA, 1942-1960

Period (to Dec. 31)	Number of Years	Number of Certificates Granted	Cumulative Total	Average Number Per Annum
1942-1944.....	3	1,221	1,221	407
1945-1949.....	5	3,029	4,250	606
1950-1954.....	5	2,185	6,435	437
1955-1956.....	2	934	7,369	467
1957-1958.....	2	1,070	8,439	535
1959-1960.....	2	1,051	9,490	523
TOTAL.....	19	9,490*		499

* Includes 511 individuals certificated in more than one specialty.

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 4.

Criticisms levelled at this trend are based on both scientific and social arguments. On the first count there is the danger that the specialist will tend to think of disease in terms of a particular organ or anatomical system. On the other it is possible that the beneficial aspects of the long-term personal relationship between a patient and his physician will gradually

¹ *Ibid.*

decline as medical care to one patient is increasingly rendered by several physicians. In general, movements to counteract the adverse effects of specialization aim at the "comprehensive" care of the patient. Some attempt has been made to incorporate an emphasis on the "total approach" in medical education. However, so great have been the pressures of specialization towards the fragmentation of medical care that the more successful attempt has been one that recognizes the fact of specialization but seeks to provide comprehensive care through the judicious combination of specialties within the organizational framework of combined practice.

Types of Practice

There are three main types of private medical practitioners in Canada today: those who are self-employed independent practitioners, those who are in partnership, and those in group practice. In 1962 these three groups comprised nearly 71 per cent of all active civilian physicians, 47.2 per cent were self-employed, 13.4 per cent were in partnership, and 10 per cent were in group practice. Of the remaining physicians nearly 14 per cent were working in hospitals that were not operating under the auspices of public authorities. The remainder were distributed amongst three levels of government, the universities and industry.¹

In North America the traditional organization of medical practice is that of the independent physician operating under a fee-for-service system. The high degree of independence of the medical practitioner, whether he be in solo practice, in partnership, or in group practice, stems from the traditional belief that the individual is the really significant object of service and that such service is the sole responsibility of the practitioner. The individual concerned, on the other hand, puts his physician in a position of special trust and confidence. This imposes a special kind of responsibility upon the physician.

Although the practitioner may call upon colleagues for advice and help, the ultimate responsibility for the patient is his; he cannot share the patient's trust except through prior discussion with the patient, and even then it still remains his responsibility until relieved by the patient. Furthermore the physician cannot mass produce his services; he must treat each patient individually bringing all his skills to bear on each case. "The professional man cannot spread his services, he cannot, except within narrow limits, distribute his skill through subordinates. He is unable to go in for mass production and is forbidden to offer cheap lines for slender purses."² This tradition enforces a high degree of individualism and independence

¹ *Ibid.*

² Marshall, T. H., "Professionalism and Social Policy", in *Man, Work and Society*, ed. Sigmund Nosow and William H. Form, New York: Basic Books, Inc., 1962, p. 227.

upon the physician. The situation vis-à-vis the patient is such that he cannot relinquish his responsibility except to another doctor.

Despite this tradition, group practice has developed in Canada. The variations to be found in this type of practice are immense; essentially, "It entails professional co-operation, rather than competition of the physicians within a particular group practice. It includes three or more doctors representing various specialities as well as general practice, with joint ownership of buildings, office facilities and equipment. There is a pooling of medical skill, knowledge and experience through consultations and the collective use of technical administrative and other auxiliary personnel. Income is distributed to members of the group according to agreed principles".¹

Judging by replies to a questionnaire on medical practice distributed by the Commission to all Canadian physicians, the combination involving three or more specialties attracts a greater number of specialists than does the partnership which is more popular with the general practitioner. This is not to say that general practitioners do not participate in the former groups, but there is a tendency for the contribution they make to total patient care to be rendered by a specialist in internal medicine or by a paediatrician. Group practice tends to contribute in some way to a better utilization of the services of the physician. It generally results in more efficient administration, greater use of technical equipment, paramedical and surgical personnel. Its growth, therefore, may be seen as an answer to an increased demand for physicians' services as well as a more satisfactory way of practising for physicians.

Medical group practice exists not only in the larger communities but also in some rural areas—for example, that at Maple Creek, Saskatchewan. Some groups have been formed as a result of health plans negotiated by rural communities. There are other instances where the actions of certain "consumer" groups have stimulated the growth of combined practice amongst doctors; a recent example is the establishment of a group practice clinic to serve a local of the Steel Workers Union at Sault Sainte Marie.²

A survey of group practice conducted in Canada in 1954 indicated that of the responding physicians (74 per cent of all physicians in group practice in Canada) 25 per cent were on a salaried basis or partially salaried. This is in contrast to the traditional pattern of the physician earning fees for services rendered. The salaried form of remuneration in group practice is, however, part of a much larger movement towards the salaried employment of medical practitioners. Physicians are increasingly being employed in administration, teaching, research and industry, with a corresponding decline

¹ Judek, S., *op. cit.*, Chapter 6.

² A further analysis of group practice is contained in Chapter 13.

in the proportion of physicians in private practice.¹ In 1943 physicians in private practice formed 85.1 per cent of all active civilian physicians, in 1961 they formed 73.5 per cent. The apparent increase in the number of physicians in other forms of employment may be underestimated because a number of physicians in private practice devote part of their time to work in research, administration, etc.

Education of the Physician

The fundamental purpose of medical education, which embraces undergraduate, graduate and continuing medical education, is to produce qualified physicians who will co-operate with others in meeting the health needs of society.²

The medical school in Canada is an integral part of the university. It is headed by a dean who is appointed by the Board of Governors of the university. The responsibilities of the school are divided among clinical departments each with its own head or chairman. These department heads in fields such as medicine, surgery, obstetrics and gynaecology, psychiatry, and paediatrics are appointed as geographic full-time³ members of the medical school. The heads of the basic science departments such as bacteriology, anatomy, biochemistry, pathology, and physiology are also full-time members of the medical school. However, there is a tradition in medicine that whenever possible physicians should devote part of their time to teaching, and in Canada today much of the teaching in medical schools is undertaken by part-time faculty members who are practising physicians in the community. These men devote their time to medical education for a standard of remuneration which, in most cases, is nominal.

The teachers, both full- and part-time, in medical schools are an obviously vital element in the structure of medical services. On their shoulders rests the tremendous responsibility of educating a sufficient number of physicians to meet the demands for medical care in our society, a demand that is growing, and will continue to grow with the expansion of the method of prepaying medical and other health expenses. Without sufficient numbers of teachers in our medical schools any proposals for the expansion of medical care services face serious obstacles.

¹ Whether this trend will continue in the future is problematical.

² Further discussion of medical education is contained in Chapter 13.

³ In Canada a "geographic full-time clinical teacher" is one whose first responsibility relates to his appointment in the university from which he should derive the major part of his income. He may see private patients, but he does so within the teaching hospital in which he holds a clinical appointment. There may be financial limits on the amount of income from private patients which may supplement his university stipend, and there may be limitations on time as well. He is encouraged to confine his practice to referred patients. He may not establish any office for private practice outside the hospital.

It is the teacher in the basic sciences, anatomy, biochemistry, microbiology, pathology, pharmacology and physiology whom the neophyte medical student meets first. From these faculty members the student learns the fundamentals on which many of his clinical skills are based. The person wishing to become a teacher in one of these fields faces a long, arduous and expensive training period. If he wishes to graduate in medicine before undertaking post-graduate work in one of the basic sciences, he faces a minimum of twelve years of training: two years pre-medicine, four years medicine, one year of internship, three years for the Ph.D. in a basic science field, and a further two years of research experience. Only then will he be capable of undertaking research as an independent investigator. Because the acquisition of the medical degree adds appreciably to the time required to become an independent investigator and teacher in the basic sciences, many individuals prefer to qualify for the Ph.D. only. Even so, this requires three to four years of undergraduate training, three or four years to obtain the Ph.D. and two further years of experience to become an independent investigator and teacher; a total of eight or nine years. The extent to which this latter course is followed in Canada is seen in the following table.

TABLE 7-9 PERCENTAGE DISTRIBUTION OF TEACHERS OF BASIC SCIENCE OF RANK OF ASSISTANT PROFESSOR OR HIGHER IN TWELVE CANADIAN MEDICAL SCHOOLS ACCORDING TO QUALIFICATIONS, 1962

Subject	Degrees Held				
	M.D.	Ph.D. (D.Phil., D.Sc.)	M.D. and Ph.D.	No Doctoral Degree	Total
Anatomy.....	55	19	21	5	100
Physiology.....	45.5	41.5	12	1	100
Biochemistry.....	8	83	6.6	2.4	100
Pharmacology.....	33	50	12.5	4.5	100
Microbiology.....	55	27	12	6	100
Pathology.....	74	10	13	3	100

SOURCE: MacFarlane, J. A., et al., *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 6.

The teachers in clinical fields also face a long and expensive training: ". . . most teachers will be required to achieve the Fellowship in the Royal College, and will have acquired particular knowledge in the narrow field of a specialty. A majority will have had some training in research

methods, in either a basic science department or a Clinical Investigation Unit. They will have spent four to six years in training after the pre-registration Junior Internship".¹

The salaries of the medical faculty are the responsibility of the university, although in the past few years substantial assistance has been received from the Medical Research Council for medical research associates. In addition, financial support for full-time clinical staff has been forthcoming from Canada and United States foundations and voluntary associations. Salary scales in the various departments of Canadian medical schools vary according to the university, but in 1961 they were as follows:²

Department Heads	\$11,000 - 18,000
Professors	10,500 - 17,000
Associate Professors	8,500 - 12,300
Assistant Professors	6,500 - 10,000

These salary ranges reflect the substantial improvement in university salaries in recent years, but for teachers in the basic science departments of medical schools who hold both the M.D., and Ph.D. degrees who cannot supplement their university stipends the investment in time and money required to qualify for them is an unattractive prospect.

The introduction of the Hospital Insurance and Diagnostic Services Act affected the relationship between medical schools and teaching hospitals. The teaching hospitals have become less dependent upon the financial support and the prestige of the medical schools. Today it is difficult for some teaching hospitals to accept the view of the medical faculty on matters pertaining to problems of professional service. The Act does not include the salaries of full-time faculty, and the appropriate fees of part-time faculty as a shareable expense. Nor does it include medical research which is so vital to good teaching.³ Another important element in the teaching of medical students is the hospital out-patient department where the student takes responsibility for individual ambulatory patients under the guidance of his clinical instructor. Under the Act the provincial government decides if out-patient services are to be included as a shareable cost. Some have excluded them thus placing a strain on the financing of these services and the provision of educational services in this department.

The growth of plans for the prepayment of medical expenses has also affected the relationship between the medical school and the teaching hospital. With a growing proportion of the population covered by these plans it becomes increasingly difficult for medical schools to obtain charity patients for teaching purposes. With the possible growth in prepayment to cover

¹ McFarlane, J. A., et al., *op. cit.*, Chapter 9.

² *Ibid.*, Chapter 5.

³ Public funds are available for medical research through the medium of the Health Grants. See Chapter 10.

an even greater segment of the population, the medical schools face a serious obstacle to teaching.

In order to meet changing needs, some Canadian universities have accepted a new approach to medical education. The University of British Columbia, Laval University, and the University of Montreal are organizing health sciences centres of which the teaching hospital is an integral part. These centres are based on the idea that although the various professionals working in the health field are trained according to distinct disciplines in separate departments of the university, their common purpose should predispose them to work together. In order to do this they require a variety of paramedical co-workers. The environment in which this idea of a co-operative enterprise can be nurtured, and which promotes an understanding of the contributions which the various professional skills make in prevention, treatment and rehabilitation, is a health sciences centre. In the process of working together in the centre the various health professions would come to accept the idea of a co-operative approach to health problems. It might be claimed that such a centre would tend to be isolated from the rest of the university with the result that the health professions, while becoming technically more competent than they are under present teaching arrangements, will be so isolated from the community of scholars in other fields of learning that they will lack an appreciation of developments in these other fields. The assumption here is that such an appreciation is developed under the present system of medical education. A moot point indeed!

One of the most serious problems facing those responsible for medical education in Canada today is to ensure that the standards of medical care, which are such an integral part of everything the medical student is taught, are maintained in practice. The professional association and the licensing body seek to maintain these standards, but it is the responsibility of the individual practitioner to adhere to them in his day-to-day practice. There is an assumption that as a recognized professional the individual practitioner's day-to-day actions will be open to the scrutiny of his colleagues who will expect him to live up to professional standards of conduct and practice. Only by doing so can the individual practitioner gain their approval and esteem. Without this acceptance by his colleagues he may find his earning power significantly impaired. The implicit concern of fellow practitioners provides the necessary controls for the majority of physicians, but as Clute has recently indicated with respect to general practitioners, such controls do not apply to a significant proportion of general practitioners whose practice does not provide the standard of care which their professional colleagues and the general public expect.¹

¹ Clute, Kenneth F., *The General Practitioner*, Toronto: University of Toronto Press, 1963, p. 461.

The Code of Hammurabi of about 2270 B.C. states that "If a physician treats of man for a severe wound with a bronze knife and kill him, or if he open an abscess (near the eye) and destroy the eye, one shall cut off his hands".¹ This punitive approach to the control of standards of medical care has been superseded by the profession's reliance on collegial control, but since the latter does not always produce the desired results, medical educators in Canada are experimenting with continuing medical education programmes. Their aim is to assist the practising physicians to keep in touch with recent advances in medical knowledge. As we have noted in a previous chapter of this report, the corpus of scientific knowledge is increasing in size at an accelerating rate.² In fact, Robert Oppenheimer claims that today research doubles the body of scientific knowledge every ten years.³ This rate of increase in medical knowledge poses major problems for the educators. Not only is it impossible for the medical student to master the details of all available knowledge, but new developments occur at such a rapid rate that the knowledge he does assimilate is quickly superseded by new developments. How, then, can the busy practising physician keep abreast of new findings in his particular professional field? He may try to do so by careful study of his professional journals, but if his services are in great demand, as are the services of most physicians in Canada today, the amount of time he can give to such study is quite limited, and in many cases non-existent. The practitioner may try to glean what new knowledge he can from the papers presented at his local medical society but as a source of new developments this approach has definite limitations. Some university medical schools—notably Dalhousie, Toronto, Laval, and British Columbia—have organized refresher courses for general practitioners but due to the difficulties faced by the busy general practitioner in leaving his practice, they reach only a small proportion of physicians. Regional Clinical Programmes are another innovation organized by the already mentioned medical schools. The local hospital is the focus of the programme, and with the co-operation of the local medical society, problem cases are presented to those attending by the staff of the hospital. These local programmes have had some success, and it is possible that they can provide one pattern for a system of continuing medical education which is such an important factor in maintaining a high standard of medical care; a standard which may be under serious strain with a steadily rising demand for medical services.⁴

¹ Code of Hammurabi as quoted by MacFarlane, J. A., et al., *op. cit.*, Chapter 9.

² Chapter 3.

³ MacFarlane, J. A., et al., *op. cit.*, Chapter 9.

⁴ The place of continuing medical education is discussed further in Chapter 13.

DENTAL PROFESSION

The formation of the Canadian Dental Association in 1902 marked the beginning of a statistical system from which can be derived fairly reliable data on the number of dentists. However, information on supply does not indicate whether these numbers are adequate. We know that the profession has grown in size, but the population which it serves has grown at an even faster rate.

Population-Dentist Ratio¹

Ratios of this type usually conceal more than they reveal; some of their shortcomings have been noted in our discussion of the population-physician ratio. There is no doubt generally speaking that the better the ratio the more likelihood there is that the demand for dental care can be met. Comparison of ratios between countries with a similar social structure, and at approximately the same stage of economic development can give at least some indication of the relative position of individual countries with respect to the adequacy of the supply of various types of health personnel and in this case, the practising dental profession.

Canada's population per dentist ratio ranks low when compared with those for some European countries. Table 7-10 shows that only four European countries have ratios worse than our own. Of the 19 countries reviewed, Canada ranks fourteenth.

Some idea of the provision of dental services on a regional basis is set out in Table 7-11, and shows significant variations between provinces, with seven provinces showing a lower standard than Canada as a whole. Three provinces, Alberta, Ontario and British Columbia have ratios better than the national average but it is the ratios of the latter two provinces which bring the national ratio to its present level.

Since its entry into Confederation, Newfoundland has experienced a considerable improvement in its ratio, but in the other provinces the trend has worsened.² These trends are shown in Table 7-11.

¹ It will be noticed that in the population-dentist ratios quoted in the Tables which follow, there may be a difference of a year—i.e., in Table 7-10 the ratio of 3,032 is given for Canada for 1959. This is closer to the 1960 ratio of 3,025 quoted in the following Table 7-11. It depends on whether first-of-year or end-of-year figures for dentists are used to divide into the June estimate of population. McFarlane (i.e., Table 7-11) uses first-of-year figures; we use end-of-year figures. See also footnote 2 in Table 13-10, Chapter 13 of this Report.

² The future supply of dentists is discussed in Chapter 13.

**TABLE 7-10 POPULATION-DENTIST RATIO,
CANADA AND SELECTED COUNTRIES, 1959**

Country	Population per Dentist
Germany: Federal Republic.....	566
Sweden.....	1,497
Norway.....	1,528
Austria.....	1,762
United States.....	1,919
Denmark.....	2,006
New Zealand.....	2,209
Switzerland.....	2,413
Australia.....	2,429
Finland.....	2,522
Greece.....	2,550
Spain.....	2,915
France.....	3,006
Canada.....	3,032
England and Wales.....	3,947
Holland.....	4,294
Belgium.....	6,784
Portugal.....	74,205
Italy.....	—*

*Not available.

SOURCE: Special compilation based on data from World Health Organization, *Annual Epidemiological and Vital Statistics 1959*, Geneva 1962, pp. 654-659, and *Demographic Yearbook 1960*, New York: United Nations, 1961, pp. 104-115.

Graduates of Canadian Dental Schools

The first three dental schools organized in Canada were not developed as part of a university though they all—the Royal College of Dental Surgeons, Toronto; the Dental School of Montreal, Montreal; and the Maritime Dental School, Halifax—had at least some connection with the local universities. Today these three, plus those which were subsequently organized, are faculties of recognized universities. The six dental schools¹ which are operating in Canada have produced 4,105 graduates since 1939. Approximately seven per cent of these graduates came to study in this country from the Commonwealth and the United States. On the other hand between 1955 and 1963, of all Canadian dental students, four per cent went to dental schools in the United States. How many of these returned to practise in Canada is not known.²

¹ Located at Dalhousie University, Université de Montréal, McGill University, University of Toronto, University of Manitoba and the University of Alberta.

² McFarlane, Bruce A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

TABLE 7-11 POPULATION-DENTIST RATIO, BY PROVINCES AND CANADA, 1881-1962

Year	Canada	Province									
		Nfld	PEI	NS	NB	PQ	Ont	Man	Sask	Alta	BC
1881....	8,480	—*	—*	—*	—*	—*	—*	—*	—*	—*	—*
1891....	6,419	—*	—*	—*	—*	—*	—*	—*	—*	—*	—*
1901....	4,100	—*	—*	—*	—*	—*	—*	—*	—*	—*	—*
1911....	3,301	—*	4,260	3,939	3,591	6,134	2,242	3,549	5,533	3,565	2,453
1921....	2,783	—*	4,028	3,401	3,463	3,753	2,130	2,812	4,139	3,081	1,921
1931....	2,569	—*	3,036	3,185	3,292	3,459	1,853	2,789	4,133	3,167	2,060
1938....	2,646	—*	3,100	3,248	3,973	3,594	1,882	2,849	4,390	3,288	2,097
1941....	2,733	—*	3,394	3,247	3,876	3,571	2,003	2,931	4,091	3,290	2,323
1943....	2,714	—*	3,214	3,377	4,936	3,553	2,004	2,828	3,926	2,885	2,390
1944....	2,678	—*	3,956	3,311	4,724	3,608	1,932	2,869	4,029	2,784	2,400
1945....	2,638	—*	3,250	3,199	4,044	3,539	1,922	2,908	4,078	2,667	2,408
1946....	2,644	—*	3,286	3,292	4,448	3,511	1,898	3,107	4,361	2,786	2,326
1947....	2,671	—*	3,357	3,378	4,193	3,486	1,967	2,979	4,272	3,042	2,204
1948....	2,728	—*	3,357	3,203	4,518	3,503	2,055	2,944	4,287	3,033	2,250
1949....	2,819	—*	3,207	3,511	4,446	3,563	2,155	3,045	4,297	3,175	2,283
1950....	2,906	18,158	3,241	3,678	4,838	3,561	2,194	3,154	3,981	3,127	2,290
1951....	2,791	16,714	3,200	3,323	4,830	3,460	2,126	2,965	3,839	2,844	2,203
1952....	2,763	17,210	3,394	3,278	4,688	3,357	2,134	2,975	3,815	2,864	2,134
1953....	2,772	15,583	3,030	3,315	4,655	3,361	2,159	3,093	3,780	2,764	2,171
1954....	2,802	11,969	2,970	3,348	4,595	3,353	2,226	3,088	4,005	2,728	2,163
1955....	2,855	11,970	2,886	3,399	4,538	3,423	2,293	3,106	3,897	2,804	2,195
1956....	2,898	11,600	3,030	3,449	4,484	3,491	2,320	3,290	4,046	2,848	2,204
1957....	2,934	10,643	2,920	3,599	4,437	3,522	2,353	3,232	4,234	2,836	2,285
1958....	2,985	10,341	2,912	3,670	4,496	3,652	2,378	3,504	4,211	2,825	2,352
1959....	2,969	9,391	3,030	3,731	4,605	3,627	2,351	3,159	4,243	2,892	2,449
1960....	3,025	10,256	2,886	3,725	5,105	3,630	2,410	3,217	4,724	3,029	2,400
1961....	3,047	10,667	3,322	3,709	4,908	3,705	2,432	3,168	4,668	2,995	2,420
1962....	3,108	10,648	3,608	3,879	4,822	3,712	2,511	3,257	4,794	3,069	2,406

*Not available.

SOURCE: Data supplied by the Canadian Dental Association.

The capacity of our present dental schools for first year students is 338, an increase from 202 in the academic year 1952-53. Any increase in the number of dentists in Canada depends almost solely on an expansion in the available places in the first years of dental schools.

The Migration of Dentists

Unlike the medical professions, the inflow of new members into the dental profession as a result of immigration is comparatively small. The various provincial licensing regulations are partly responsible for this state of affairs.¹

While it is true that comparatively few dentists enter Canada as immigrants, it is also true that comparatively few emigrate. According to the Canadian Dental Association only 200 have left Canada since 1945, or approximately six per cent of the total number of dentists who have graduated from Canadian dental schools since that date. Of these emigrants, three-fifths went to the United States.²

Death and Retirement of Dentists

The death rate of dentists who are members of the Canadian Dental Association is approximately 1.2 per cent per year.³ We expect this rate to increase slightly in the next few years because almost one-third of the number of dentists now practising in Canada were born around the turn of the century.

The number of dentists who retire in a particular year is difficult to determine. Many dentists continue to retain membership in their professional association after they have retired or become inactive in some other way. Furthermore, dentists, like physicians, tend to give up practising by degrees so that while some older dentists may give the appearance of being active in their profession, in fact, they are providing a limited amount of service.

The British Dental Association reports that 12 per cent of its registrants in 1962 were no longer practising dentistry.⁴ In 1961 the American Dental Association reports 11.3 per cent in the same category.⁵ In Canada, the Manitoba Dental Association reports 11 per cent of its registrants were inactive in 1962.⁶ However, an annual average of only 1.1 per cent of Canadian dentists report their retirement to the Canadian Dental Association.⁷ Obviously, this figure is too low.

Geographic Distribution of Dentists

Table 7-12 shows that a serious maldistribution of dentists exists in all provinces in Canada. This is true even in provinces with a comparatively

¹ This point is discussed further in Chapter 13.

² McFarlane, Bruce A., *op. cit.*, Chapter 2.

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

favourable over-all ratio. Thus, in Ontario there are some rural areas where the population-dentist ratio is as low as 20,892. Some urban areas too, suffer the same lack of dental services. Pembroke, Ontario, for example has a ratio of 10,000. Usually, however, the urban ratios are considerably more favourable than those in rural areas.¹

Prince Edward Island is in a somewhat different situation in this regard when compared with the other provinces. Although it has a disparity in favour of urban dentists, the province is small enough for dentists from urban areas also to serve rural areas.

TABLE 7-12 POPULATION-DENTIST RATIO, BY SIZE OF COMMUNITY AND PROVINCE 1960

Province	Community Size		Ratio of Column B to A
	Under 10,000	Over 10,000	
	A	B	C
Newfoundland.....	30,859	3,424	1:9
Prince Edward Island.....	5,304	902	1:6
Nova Scotia.....	5,146	2,693	1:2
New Brunswick.....	8,604	2,682	1:3
Quebec.....	7,828	2,538	1:3
Ontario.....	4,136	1,956	1:2
Manitoba.....	9,145	2,041	1:4
Saskatchewan.....	8,411	2,046	1:4
Alberta.....	7,167	1,790	1:4
British Columbia.....	3,920	1,933	1:2
CANADA.....	6,061	2,119	1:3

SOURCE: McFarlane, Bruce A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

Specialization

Many general dental practitioners "specialize", but only 3.8 per cent of Canada's dentists are qualified specialists.² There are three recognized dental specialties in this country: orthodontics, oral surgery and periodontics. In other countries the number may vary. In the United States, for example, there are four additional specialties.³

Between 1952 and 1962 there has been a moderate proportionate increase in the number of dental specialists, from 2.5 to 3.8 per cent. These,

¹ *Ibid.*, Chapter 3.

² The Province of Newfoundland does not certify any dental specialists.

³ McFarlane, Bruce A., *op. cit.*, Chapter 3. They include paedodontics, prosthodontics, oral pathology and public health.

even more than their colleagues in general practice, tend to concentrate in urban centres. Over three-quarters of the practitioners in each specialty are located in cities of over 250,000 population. Ontario has by far the largest share of these specialists with 54 per cent while Newfoundland and Prince Edward Island have none.¹

Types of Practice

In Canada dentistry is predominantly an independent, fee-for-service type of practice. It is perhaps the health profession least marked by salaried employment or the concentration of personnel in large groups. This manner of organizing dental service is accompanied by a generally inadequate level of dental health.²

Forms of combined practice are found in dentistry—out of a sample of 216 dentists surveyed for this Commission approximately 30 per cent were engaged in other than solo practice.³ Nevertheless the trend is not as marked, nor are the variations of combined practice so diverse as in the medical field. To a large extent dentists still retain their independent solo practice and even among those reported to be engaged in some form of combined practice, only 18 per cent share space, facilities and patients with colleagues.⁴ It is possible though that combined or group practice in dentistry has advantages similar to those found in group practice in medicine: the pooling of special skills, equipment, and ancillary personnel; opportunity for continued education; and lower operating expenditures.

Education of the Dentist

According to Paynter⁵ the six dental schools operating in Canada today, have a capacity for 338 first year students, or a total for the four years of the dental course of 1,352 students. An additional school with a first year capacity of 40 students is now being organized at the University of British Columbia. In the past the faculty of these schools consisted largely of practising dentists who taught part-time. Although the proportion of full-time academic staff has risen from nine per cent in 1926 to 18.7 per cent in 1961, the fact remains that half-time and part-time staff today make up 81.3 per cent of the faculty of our dental schools. In 1958 in the United States 31.4 per cent of the faculty were full-time.⁶

¹ *Ibid.*

² See Chapter 5 of this Report.

³ Hall, O., *The Utilization of Dentists*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter III.

⁴ *Ibid.*

⁵ Paynter, K. J., *Dental Education*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 5.

⁶ *Ibid.*

Of the full-time staff 45.3 per cent have the D.D.S. degree only, and 28 per cent have specialist qualifications. A further 18.7 per cent have a D.D.S. degree plus a Masters or a Ph.D. degree. Of the part-time staff, 85.5 per cent have the D.D.S. degree only, 10.7 per cent have specialist qualifications, and 0.6 per cent have a D.D.S. degree plus a Masters or Ph.D. degree.¹

These data indicate that the standard of dental education in Canada may not be as high as one might wish. No matter how dedicated the efforts of the present faculty, it is probably well-nigh impossible for them to maintain the standards of dental education they desire. According to the Commission on the Survey of Dentistry in the United States the ratio of full-time to part-time faculty should be two to one.² In Canada this ratio is about one to five. The strain on quality is further accentuated when we consider that the ratio of full-time and half-time staff to students stood at 1:12.6 in 1961-62. In his study of dental education in British Columbia, Macdonald recommended a ratio of 1:5.4.³

The fact that a significant proportion of full- and part-time faculty in our dental schools have no training beyond the D.D.S. degree, is due in part to the limited opportunities for graduate study in dentistry in Canada. Furthermore, not all of our dental schools are considered to have adequate facilities to offer graduate courses. In fact, only two dental schools provide programmes to train candidates as research workers. While this lack continues our present dental schools will be inadequately staffed, research will be impoverished or negligible, and the expansion of existing schools and the building of new schools will be severely hampered.

Of considerable importance in the organization of dental education in Canada today is the relationship between the dental school and other university departments especially the medical school. Dental schools rely on other departments, such as those in the biological and physical sciences, for student instruction, thus relieving them of adding to the school faculty members qualified in these fields. The medical school provides instruction in the basic sciences with the same result.

The concept of the Health Sciences Centre, within which the basic sciences serving the field of health form a unit, is a possible means of overcoming the scarcity of qualified personnel, for in this way the basic scientist would instruct not only physicians and dentists but also those students in the paramedical fields requiring the same type of instruction.⁴

¹ *Ibid.*

² Commission on the Survey of Dentistry in the United States, *The Survey of Dentistry, The Final Report*, Washington, D.C.: 1961, American Council of Education, p. 309.

³ Macdonald, J. B., *A Prospectus on Dental Education*, Vancouver: University of British Columbia, 1956, p. 53.

⁴ Dental education is discussed further in Chapter 13.

NURSING PROFESSION

Unlike medicine and dentistry, nursing is practised mainly in an institutional setting, the hospital. Most other nurses are employed by public or private agencies with few practising independently. In the early part of this century the practice of nursing was more independent than it is today; in those days the nurse usually worked alone providing care in the home ranging from the actual care of the sick to the care of the children. Today, the hospital nurse performs a wide variety of duties many of which were unknown at the beginning of this century. She generally no longer cares for one patient in the home, but serves rather as a member of a team caring for a large number in a hospital. As the independent practice of nursing diminished, nursing procedures became more specialized and technical. Many of these procedures were formerly the responsibility of the physician:

"Physicians are delegating increased responsibilities to the professional nurse. World War II gave impetus to the use of nurses for carrying out certain procedures,—e.g., giving intravenous fluids—formerly performed by the physician. Today the nurse when adequately trained is able to act on her own initiative in taking emergency measures—e.g., relieving respiratory distress—for the care of postoperative or other critically ill patients. With development of new techniques, she will be expected increasingly to perform highly specialized tasks . . ."¹

There is little doubt that the role of the nurse is changing to meet the realities of the current health scene. These changes are a challenge to the profession for they have a direct bearing on the attractiveness of nursing as a career, and on the supply of nurses to meet our health needs. They also have a significant impact on the education of nurses and on the quality of nursing care.²

Population-Nurse Ratio

An approximation of the number of nurses in Canada can be obtained from statistics of registration but the limitations of such an estimate should be borne in mind. Licensing and registration of nurses are a provincial responsibility. The requirements vary from province to province. For example, in Newfoundland, Prince Edward Island, Quebec and Manitoba nurses who wish to practise must register with the provincial nurses' association and obtain a licence. In other provinces, a diploma nurse can work as nurse without registering. In the four provinces with licensing systems, therefore, statistics theoretically include all nurses who are actively practising

¹ U.S. Department of Health, Education, and Welfare, *Toward Quality in Nursing, Needs and Goals*, Washington: United States Government Printing Office, 1963, p. 4.

² The changing role of the nurse is discussed further in Chapter 13.

while in the other provinces the statistics do not necessarily cover all active nurses. In addition, nurses who have qualified may maintain their registration even though they are not practising. The foregoing indicates that statistics dealing with registered nurses do not provide a complete record of active and inactive nurses, but they can be useful in indicating trends.

The number of nurses registered in Canada has increased substantially over the post-war period. As shown in Table 7-13, 27,853 nurses were registered in Canada in 1941. Twenty years later in 1961, there were 78,340 registered, an increase of nearly threefold over the period. The more important part of this increase has taken place in the decade 1951-1961; in that period, the percentage increase amounted to nearly 80 per cent.

Along with the growth in the number of registered nurses has gone an improvement in the Canadian population-nurse ratio. As can be seen from Table 7-14, the population-registered nurse ratio has steadily declined until by 1962, there was one registered nurse for every 220 Canadians.

One piece of evidence relating to the growth of the supply of nurses practising their profession, as opposed to maintaining their registration is to be found in the decennial Census of Canada. These data are presented in Table 7-15 and show that between 1941 and 1951 the number of nurses reporting themselves as actively engaged in the practice of their profession,

TABLE 7-13 NURSES REGISTERED, ANNUAL INCREASE IN REGISTRATION AND NUMBER OF GRADUATES, CANADA, SELECTED YEARS, 1941-1961

Year	Number of Nurses Registered	Increase in Registration	Number of Graduates
1941.....	27,853	—	—
1950.....	41,088	—	4,068
1951.....	43,924	2,836	4,349
1952.....	43,880	—44	4,452*
1953.....	47,775	3,895	4,555*
1954.....	50,131	2,356	4,658*
1955.....	54,518	4,387	4,761*
1956.....	59,419	4,901	4,866
1957.....	60,864	1,445	5,034
1958.....	64,666	3,802	5,244
1959.....	68,502	3,836	5,670
1960.....	72,885	4,383	5,483
1961.....	78,340	5,455	6,004

*Estimated.

SOURCE: Based on data supplied by the Canadian Nurses' Association.

TABLE 7-14 POPULATION-REGISTERED NURSE* RATIO, CANADA AND PROVINCES, SELECTED YEARS, 1941-1962

Province	1941	1951	1955	1956	1957	1958	1959	1960	1961	1962
Newfoundland.....	—	—	612	654	592	555	531	506	478	449
Prince Edward Island.....	805	268	268	247	259	262	252	234	226	235
Nova Scotia.....	558	336	353	319	342	326	321	308	274	258
New Brunswick.....	713	395	348	342	340	310	289	268	244	228
Quebec.....	787	491	453	450	437	433	429	418	394	360
Ontario.....	257	216	200	191	198	191	179	176	165	162
Manitoba.....	474	411	347	325	307	311	308	257	247	241
Saskatchewan.....	736	364	301	282	269	251	269	247	245	235
Alberta.....	541	395	357	340	337	321	301	296	289	207
British Columbia.....	288	274	253	203	208	201	209	193	192	190
CANADA.....	413	319	288	271	273	264	255	245	233	220

*Registered nurses working in the Northwest Territories or the Yukon would be registered in one of the provinces.

SOURCE: Based on Table 7-13 and data obtained from the Canadian Nurses' Association.

either full-time or part-time, rose from 21,171 to 35,129 while by 1961 this had increased to 61,699.¹ Thus, about 80 per cent of registered nurses were in practice in the decade 1951-61. On the basis of census data the population-practising nurse ratio improved from 399 in 1951 to 296 in 1961.²

It is evident that registrations, while indicating the trend rate of growth in supply, are not a reliable indicator of the number of nurses practising at a particular moment of time. Table 7-13 makes this clear. While the number of graduates increased steadily in the period 1951 to 1961, the number of nurses registered changed quite abruptly. In 1952, there were fewer nurses registered than in 1951, yet in 1952, 4,452 nurses graduated. Again, in 1957 the increase in nurse registration was only 1,445, although 5,034 nurses graduated. There must be some variable operating here that is not revealed by the data. Is it possible that during the preceding few years of high employment levels some nurses gave up jobs which had been relied on for extra income? Significantly, in 1958, after a year of recession, the number of nurses registered increased by 3,802. Evidently, the number of qualified graduate nurses actually working at any given time is somewhat less than the number registered, but by how much less is difficult to establish without knowing a good deal more than at present of the social reasons for the changes in the rates of participation in the labour force.

¹ A registered nurse is one who has met specified qualifications for admission, and has been entered in a register of nurses authorized by a provincial statute. An active nurse is one who is registered and practising as a nurse.

² Ratio based on Table 7-15.

TABLE 7-15 NUMBER OF ACTIVE AND REGISTERED NURSES,
CANADA, CENSUS YEARS 1941-1961

Year	Number of Registered Nurses	Number of Active Nurses (Census)	Active Nurses as Per-cent of Registered Nurses
1941.....	27,853	21,171	76.0
1951.....	43,924	35,129	80.0
1961.....	78,340	61,699	78.8

SOURCE: Table 7-13 and Dominion Bureau of Statistics, *Census of Canada, 1961*, Vol. III, Part 1, Labour Force, Ottawa: Queen's Printer, 1963, Table 6. *Census of Canada, 1951*, Vol. V, Labour Force, Ottawa: Queen's Printer, 1953, Table 10. *Census of Canada, 1941*, Vol. VI, Earnings, Employment and Unemployment of Wage-Earners, Ottawa: King's Printer, 1946, Table 6.

Although the Canadian population-registered nurse ratio has improved in the post-war period, as Table 7-14 indicates, this improvement is more pronounced in some provinces than in others. Ontario and British Columbia have the most favourable while Quebec and Newfoundland have the least favourable ratios consistently throughout this period. Improvement in the ratio is evident in every province with Prince Edward Island, New Brunswick and Saskatchewan showing the greatest gains over this period. If we can assume that registration statistics reflect at least the relative position of provinces with respect to full-time active nurses, Table 7-14 shows that Canada suffers from a shortage of nurses in certain regions.¹

The Canadian population-nurse ratio however is high in comparison with many other countries. Table 7-16 shows that only four of the selected countries in 1959 were reported to have better ratios than our own, while the remainder had a less favourable ratio. There are certain limitations to these data, however. Some data are estimates, but more important, categories of nurses, as defined by their training and professional activities, have different meanings among western nations. Nurses considered to be auxiliaries in one country might appear as professional nurses in another.

Graduates of Canadian Schools of Nursing

The major sources of the supply of nurses in Canada are hospital and university schools of nursing. Table 7-17 provides data on student enrolment and indicates large increases in both the numbers of students

¹ The future supply of nurses is discussed in Chapter 13.

TABLE 7-16 POPULATION PER NURSE RATIOS, CANADA AND SELECTED COUNTRIES, 1959

Country	Population Per Nurse
Sweden.....	122
Germany: Federal Republic.....	136
New Zealand.....	215
Switzerland.....	249
Canada*.....	255
Denmark.....	277
Finland.....	278
United States.....	294
Norway.....	366
Austria.....	453
England and Wales.....	471
France.....	536
Holland.....	815
Italy.....	952
Greece.....	1,207
Portugal.....	2,799
Spain.....	—†
Belgium.....	—†
Australia.....	—†

* From Table 7-14.

† Not available.

SOURCE: Table 7-14 and special compilation based on data from World Health Organization, *Annual Epidemiological and Vital Statistics* 1959, Geneva; 1962, pp. 674-680, and *Demographic Yearbook* 1960, New York: United Nations, 1961, pp. 154-261.

and graduates. A crucial question, however, is whether the number of students enrolled and, therefore, the number of graduates is increasing as a proportion of the junior matriculants from which nurses are recruited; i.e., the number of girls becoming nurses as a proportion of those who could become nurses. To obtain this information the number of girls entering nursing was taken as a percentage of the number of female students having junior matriculation, and therefore qualified to undertake nurse training in a particular year. Table 7-18 shows that this percentage has declined from 23.19 per cent in 1944 to 10.78 per cent in 1961. The general trend in the number entering nursing has been upward, but has increased at a considerably slower rate than the growth in the number of female students with junior matriculation. For example, the percentage rate of increase in the number of students entering nursing between 1951 and 1961 was 46 per cent, while the increase in the number of girls with junior matriculation, over the same period, was 170 per cent.

**TABLE 7-17 ENROLMENT IN CANADIAN NURSING SCHOOLS
CANADA, 1930-1961**

Year	Total Enrolment	Graduates
1930.....	9,088	—†
1939.....	8,500	—†
1945.....	12,151	—†
1946.....	12,880	—†
1947.....	12,872	—†
1948.....	13,273	—†
1949.....	14,115	—†
1950.....	14,811	—†
1951.....	15,457	—†
1952.....	15,423	—†
1953.....	15,434	—†
1954.....	15,883	—†
1955.....	17,369	—†
1956.....	17,948	4,866
1957.....	18,500	5,034
1958.....	18,168	5,244
1959.....	19,352	5,670
1960.....	21,297	5,483
1961.....	22,821	6,004

† Not available.

SOURCE: Data supplied by the Canadian Nurses' Association.

The evidence suggests that there are more than enough young women who could become nurses and that a sizeable number of young women actually chose this career. In view of present and future needs there is still a problem of obtaining more recruits for the nursing profession. In the light of the attractive alternatives open to young women, if the percentage enrolling in the nursing schools is not to decline to a level where it significantly affects the supply of nurses, we will need a fresh and imaginative approach involving recruitment, education and utilization of the nursing profession.¹

Migration of Nurses

The supply of nurses is increased each year by net migration as well as by the number of new graduates. Immigration and emigration fluctuate according to people's evaluation of the relative opportunities in other

¹ These matters are discussed further in Chapter 13.

TABLE 7-18 NUMBER AND PERCENTAGE OF FEMALES WITH JUNIOR MATRICULATION ENROLLING IN SCHOOLS OF NURSING, CANADA, 1944-1961

Year	Number of Female Students with Junior Matriculation*	Number Enrolling In Nursing Schools	Percentage Enrolling In Nursing Schools
1944.....	21,709	5,035	23.19
1945.....	22,802	4,536	19.89
1946.....	23,462	5,160	21.99
1947.....	24,181	4,929	20.38
1948.....	23,739	4,954	20.86
1949.....	27,005	5,320	19.70
1950.....	27,448	5,743	20.92
1951.....	28,997	5,754	19.84
1955.....	37,393	6,270	16.50
1956.....	39,455	6,377	16.16
1957.....	49,466	6,385	12.90
1958.....	58,441	6,895	11.79
1959.....	66,956	6,994	10.44
1960.....	70,656	7,666	10.84
1961.....	78,162	8,428	10.78

*Students graduating with Junior Matriculation from private schools are not included except for the years 1957-1961.

SOURCE: Data supplied by the Canadian Nurses' Association.

countries and this makes difficult the estimate of trends. The greatest drawback of the immigration statistics is that prospective immigrants indicate their intended occupation before leaving their country of origin, and there is no follow-up after arrival to ascertain that they have actually obtained work in this field.

The record since 1953 of immigration to, and emigration from Canada is shown in Table 7-19. Column 3 shows the number of people entering Canada who indicated they intended to practise nursing. There is no way of knowing if these intentions became a reality. Some of this number may have taken other jobs. Even if we can assume that the total in Column 3 represents the number of immigrants who practised nursing, the loss of Canadian nurses to the United States was so great that, as shown in Column 5, the net gain over the period 1953 to 1960 was only 553, not including those Canadian nurses who emigrated to countries outside North America. Because of our high level of emigration of nurses to the United States, Canada has to train more nurses for our minimum domestic requirements.

These data indicate that Canadian nurses are in great demand elsewhere, and that they willingly respond to such opportunities. It has also been presented to us that there is substantial movement of nurses from province

to province. This high degree of mobility creates special problems for less urbanized provinces and regions from which there is a constant drain.

TABLE 7-19 MIGRATION OF GRADUATE NURSES INTO AND OUT OF CANADA, 1953-1960

Year	(1) Immigra- tion from U.S.A.	(2) Immigra- tion from Other Countries	(3) Total Immigra- tion	(4) Emigration to U.S.A.*	(5) Net Change	
					(1)-(4)	(3)-(4)
1953.....	98	1,483	1,581	951	— 853	630
1954.....	83	1,375	1,458	940	— 857	518
1955.....	71	1,156	1,227	1,227	—1,156	0
1956.....	61	1,187	1,248	1,388	—1,327	—140
1957.....	58	1,671	1,729	1,553	—1,495	176
1958.....	105	1,040	1,145	1,376	—1,271	—231
1959.....	97	976	1,073	1,343	—1,246	—270
1960.....	119	1,171	1,290	1,420	—1,301	—130
TOTAL.....	692	10,059	10,751	10,198	—9,506	553

*Includes student nurses. This represents a 3 per cent over-estimate in the number of emigrants.

SOURCE: Data provided by the Department of Citizenship and Immigration.

Marriage and The Nursing Profession

As with other predominantly female occupations, a large number of active graduate nurses are married. This has consequences for the supply of nurses as substantial numbers of qualified nurses withdraw from the profession in order to marry and raise a family. Data are not available to indicate the annual rate of withdrawal for this reason, nor to show the subsequent return of married nurses into the profession. We cannot, therefore, ascertain the balance between this type of outflow and inflow. But as Table 7-20 indicates an increasing proportion of active nurses are married. Between 1951 and 1961 it rose from 25.3 per cent to 46.5 per cent. This is a reflection of a general trend in the employment of married women as is evident for a selected group of occupations in the same table.

Nature of Employment

A major factor in the adequacy of the supply of nurses is their distribution in the various employment areas. Table 7-21 shows that private duty nursing has proportionately decreased as an area of nursing activity. The table also shows that nurses in public and occupational health are not increasing at the same rate as in other categories.

TABLE 7-20 NUMBER AND PERCENTAGE DISTRIBUTION OF MARRIED FEMALE LABOUR FORCE BY SELECTED OCCUPATIONS, 1951 AND 1961

Occupation	Total		Married	
	Year	Number	Number	Per Cent
School Teachers.....	1951	74,319	15,289	20.6
	1961	118,807	49,271	41.4
Nurses, Graduate.....	1951	34,270	8,685	25.3
	1961	59,345	27,608	46.5
Nurses-in-Training.....	1951	15,581	129	0.8
	1961	22,667	468	2.1
Therapists—Phys. and Occup.....	1951	—*	—*	—*
	1961	2,044	834	40.8
Technicians—Medical and Dental.....	1951	—*	—*	—*
	1961	9,085	2,835	31.2
Dietitians.....	1951	1,100	201	18.3
	1961	1,849	666	36.0
Social Welfare Workers.....	1951	2,525	604	23.9
	1961	5,784	1,940	33.5
Stenographers and Typists.....	1951	133,485	31,665	23.7
	1961	160,843	67,654	42.1
Nursing Assistants, Stenographers and Aides	1951	—*	—*	—*
	1961	49,376	23,197	47.0

*Data not available.

SOURCE: Dominion Bureau of Statistics, *Census of Canada 1951*, Vol. IV, Labour Force, Ottawa: Queen's Printer, 1953, Table 11, Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. III, Part 1, Table 17, Ottawa: Queen's Printer, 1963, pp. 17-241 and 17-243.

As the hospitals have increased in importance as centres of modern treatment, they have expanded as centres of nursing employment. In 1930, about 60 per cent of the registered nurses were recorded as being in private duty employment; by 1960, this type of nursing employed about 9 per cent of all registered nurses. The increase in the proportion of nurses found in hospitals has been accompanied by a substantial increase in the nursing complement. In 1941, the public hospitals reporting annually to the Dominion Bureau of Statistics enumerated 7,835 nurses; by 1958, the number had risen to a total of 28,925 full-time nurses and 4,136 part-time. During the period 1954 to 1960 the total nurses employed in mental institutions and tuberculosis sanatoria rose only slightly from 6,698 to 7,677. Because of the

TABLE 7-21 NUMBER AND PERCENTAGE DISTRIBUTION OF GRADUATE NURSES IN MAJOR FIELDS OF NURSING, CANADA, SELECTED YEARS, 1930-1960

	1930		1943		1948		1955		1956		1960	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Private Duty.....	6,370	60	6,327	29	2,886	15	4,962	9	4,962	8	6,165	9
Hospital and Schools of Nursing.....	2,639	25	10,705	48	12,846	67	24,292	45	30,448	51	40,358	59
Public Health and Occupational Health.....	1,521	15	3,241	15	3,017	16	4,370	8	4,524	8	5,109	7
Other Fields and Unspecified.....	*		1,849	8	287	2	20,894†	38	19,894†	33	16,870†	25
TOTAL.....	10,530	100	22,122	100	19,036	100	54,518	100	59,828	100	68,502	100

* Data not available.

† Includes inactive nurses.

Source: Data provided by the Canadian Nurses' Association.

reduction of nursing hours and the elimination of the split shift it has been necessary to increase the number of nurses more rapidly than the number of hospital beds. Thus, although the increase in the nursing staff of public hospitals has outstripped the increase in the provision of hospital beds, some authorities still claim a shortage of nurses in Canada particularly in some areas.¹

Education of Nurses: Hospital Schools of Nursing

Today there are four main educational programmes for nurses and nursing auxiliaries in Canada: the university programme undertaken by 17 university schools of nursing, the hospital programme operated by 171 hospital schools of nursing, the nursing assistant programmes of which there are 79 across Canada, and the psychiatric nurses' programmes of which there are 8 all located in the western provinces.

The first organized nursing schools were established in Canada late in the last century and were patterned after the Nightingale system which was first implemented in connection with St. Thomas's Hospital in London, England.² There was one significant difference, in that St. Thomas's Hospital School was an independent institution whose students were not part of the hospital staff. In the Canadian schools, however, the students were required to provide service to the hospital of which the school of nursing formed a part. The education of the nurse was subordinated to the service requirements of the hospital. It should be observed that this system made it possible for many thousands of young women to obtain a professional education without direct cost. In its essentials this pattern still prevails although educational standards have improved since it was introduced. It is noteworthy that as early as 1932, in his study of Canadian schools of nursing, George M. Weir recommended that schools of nursing be removed from the control of hospitals and placed under the control of the educational authorities of the provinces.³ The demand for such a separation has risen progressively since that date.⁴

The extent to which education and service has been mixed can be seen from the financial data relating to the cost of nursing education in a few places where such records have been kept. One such estimate is obtained from the

¹ For a discussion of this point see Chapter 13.

² Gibbon, J. M., and Mathewson, M. S., *Three Centuries of Canadian Nursing*, Toronto: Macmillan Co. of Canada Ltd., 1947, p. 144.

³ Weir, George M., *Survey of Nursing Education in Canada*, Toronto: University of Toronto Press, 1932, p. 471.

⁴ See, for example, Mussallem, H. K., *Spotlight on Nursing Education, The Report of the Pilot Project for the Evaluation of Schools of Nursing in Canada*, Ottawa: Canadian Nurses' Association, 1960, p. 89. *Canadian Nurses' Association*, brief submitted to the Royal Commission on Health Services, Toronto, 1962, pp. 29-30.

TABLE 7-22 COST OF OPERATING SCHOOLS OF NURSING IN TEN SASKATCHEWAN GENERAL HOSPITALS CONDUCTING SCHOOLS OF NURSING, 1954

	Total	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Hospital F	Hospital G	Hospital H	Hospital I	Hospital J
Average Enrollment.....	1,169	211	213	51	58 Dollars	52	194	99	48	54	189
Gross Cost of Operating Schools of Nursing.....	1,763,208	357,263	321,832	65,744	80,928	81,537	320,332	129,472	62,741	100,532	242,827
Cost Per Student	1,508	1,693	1,511	1,289	1,395	1,568	1,651	1,308	1,307	1,862	1,285
Value of Students' Service.....	1,496,052	286,200	260,172	84,276	64,464	66,396	242,256	134,856	57,996	61,836	237,600
Value Per Student	1,280	1,356	1,221	1,652	1,111	1,277	1,249	1,362	1,208	1,146	1,257
Net Cost of Operating Schools of Nursing.....	267,156	71,063	61,660	18,532*	16,464	15,141	78,076	5,384*	4,745	38,696	5,227
Cost Per Student	228	337	290	363*	284	291	402	54*	99	716	28

* Excess value of students' service over the reported expenditures for the operation of the schools of nursing.

SOURCE: Wilson, L., *Cost Study of Basic Nursing Education Programs in Saskatchewan*, Regina: Saskatchewan Registered Nurses' Association, 1958, taken from Tables XVII and XVIII, p. 76.

schools of nursing in Saskatchewan.¹ Table 7-22 shows that the average gross cost per nursing student was \$1,500 in 1954 with a range of \$1,285 to \$1,862. This includes such expenditures as the cost of instruction, supplies, depreciation, general administration, etc. The value of the student's service when deducted from the gross cost indicates average net cost. Again from Table 7-22, the average net cost to the hospital is \$228 per student.² These cost figures for the hospital schools of nursing do not fully reflect the quality of the nursing programme offered. The number of students is a factor which can significantly affect the gross cost of any particular hospital school.

Unlike the financing of other educational institutions in the provinces, which are the responsibility of educational authorities with a clear conception of the aims of educational programmes, the schools of nursing are an integral part of a service institution and financed as such. It is worthy of note that one of the results of the introduction of the hospital insurance programme was to remove part of the costs of nursing education from hospitalized sick people to all taxpayers.

The lack of qualified teachers is a critical problem facing nursing education today. Table 7-23 shows that approximately 35 per cent of instructors in hospital schools of nursing are graduates of the hospital three year diploma programme with no additional training as teachers. A further 37 per cent hold one year post-basic certificates or diplomas, and 28 per cent hold B.Sc. or higher degrees. Only the last named group can be considered to be adequately trained for their hospital school teaching position. In the United States only one-fourth of teaching nurses lack an academic degree.³

One of the difficulties of achieving stability in the educational programme of nurses is the rate of turnover among faculty members. Ontario's experience, for example, suggests that 62 per cent of instructors have held their position less than two years.

The range of courses taught in the three-year programme of nursing education in Canadian hospital schools of nursing is, to put it mildly, fragmented. As many as 68 separate courses may be offered in the three years; it is not hard to imagine the content of such courses.⁴

Probably the most significant aspect of the whole programme for the student nurse is her actual nursing care or clinical experience. The clinical experience shows a wide variation in quality, due, in large part, to the fact

¹ Wilson, L., *Cost Study of Basic Nursing Education Programs in Saskatchewan*, Regina: Saskatchewan Registered Nurses' Association, 1958.

² The average net cost will vary according to the estimates of the costs of providing such services by other personnel.

³ U.S. Department of Health, Education, and Welfare, *Toward Quality in Nursing, Needs and Goals*, Washington: United States Government Printing Office, 1963, p. 9.

⁴ Mussallem, H. K., *Nursing Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter III.

TABLE 7-23 ACADEMIC PREPARATION OF FULL-TIME INSTRUCTORS
IN SCHOOLS OF NURSING, 1959, 1960, 1961

Academic Preparation	25 Schools of Nursing in Pilot Project* (1959)		171 Schools of Nursing† (1960)		171 Schools of Nursing‡ (1961)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
No Preparation.....	82	30.9	448	31.0	532	34.9
One-Year Diploma.....	116	43.8	625	44.0	568	37.2
B.Sc. Degree.....	57	21.5	319	22.0	394	25.8
Master's Degree.....	10	3.8	54	3.0	32	2.1
TOTAL.....	265	100.0	1,446	100.0	1,526	100.0

*Pilot Project refers to Mussallem, H. K., *Spotlight on Nursing Education, The Report of the Pilot Project for the Evaluation of Schools of Nursing in Canada*, Ottawa: Canadian Nurses' Association, 1960, p. 45.

†Data from Canadian Nurses' Association *Fact Finding Survey*, Ottawa: the Association, 1960.

‡Data supplied by the Canadian Nurses' Association.

that this aspect of the nurses' training in Canada is determined to a great extent by the hospitals' nursing service requirements rather than the nurses' educational needs.

Part of the nursing care required by patients provides the necessary clinical experience for the student nurse. But frequently when hospitals do not have an adequate number of nurses, they over-use students to meet demands for nursing services. In many cases these young women have not received sufficient clinical experience to provide adequate nursing service. The result: the patient is not given adequate care and there is interference with the nursing student's educational programme.

Some indication of the heavy load of nursing care carried by student nurses is shown in Table 7-24. What this table does not show is that a substantial part of the nursing service provided by students is done during night hours and largely without supervision.

As long as nursing students contribute so large a proportion of nursing service in a hospital, it is doubtful if the educational objectives of the hospital school of nursing can be fully met without some major changes.¹ According to the World Health Organization: "It is felt essential that the student nurse be a student in fact and not only in name. A major difficulty in the way of the improvement in nursing education lies in the

¹ A further discussion of hospital schools of nursing is contained in Chapter 13.

fact that the majority of nursing schools are hospital schools in which the school has not obtained control of the students' time, and in which the so-called nursing student is, in reality, an employee or apprentice. . . ."¹

TABLE 7-24 PERCENTAGE OF BEDSIDE CARE PROVIDED BY PROFESSIONAL, NON-PROFESSIONAL, AND STUDENT NURSES IN CANADIAN HOSPITAL SCHOOLS OF NURSING, 1961

Province	Professional	Non-Professional	Student
Newfoundland.....	28.6	19.0	52.4
Prince Edward Island.....	33.2	30.3	36.5
Nova Scotia.....	36.2	31.9	31.9
New Brunswick.....	39.3	30.3	30.4
Quebec.....	30.9	37.2	31.9
Ontario.....	40.7	33.8	25.5
Manitoba.....	36.7	37.0	26.3
Saskatchewan.....	32.7	32.6	34.7
Alberta.....	40.4	33.5	26.1
British Columbia.....	39.3	36.1	24.6
CANADA.....	35.8	32.2	32.0

SOURCE: Mussallem, H. K., *Nursing Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter III.

Education of Nurses: University Schools of Nursing

The first programme in nursing education leading to a B.Sc. degree was begun at the University of British Columbia in 1919. This was a five-year programme with the first two and the final years being taken at the University. The remaining two years were spent in training at the Vancouver General Hospital. Today there are 17 university schools of nursing in Canada of which 15 offer the B.Sc. degree. Of the latter number, seven offer basic degree courses comparable to those offered to other professions in which the faculty plans and assumes responsibility for the entire four-year course. The other eight universities grant the B.Sc. degree at the end of a five or six-year course, in which only the first and last years are controlled by the university. During the second, third, and fourth years the students are enrolled in hospital schools of nursing. These universities, therefore, grant degrees to students over whom they have no control for three years.² We think the time has come for all university schools to convert to the basic four-year degree course.³

¹ World Health Organization, *Report of a Study Group on Basic Nursing Curriculum*, Geneva: the Organization, 1956, p. 9.

² This point is discussed further in Chapter 13.

³ See Chapter 2, Recommendation 131.

In addition to those enrolling in these basic degree programmes a growing number of nurses who have taken the three-year hospital diploma programme are taking either a one-year post-basic certificate programme or a post-basic B.Sc. degree.

Table 7-25 shows the number of students enrolled in these courses since 1945. A period of rapid increase up to 1947 was followed by one of general decline. Since 1953, a rapid rate of growth has once more been apparent. The proportion enrolled in degree programmes has increased somewhat since 1945, but still remains at one-fifth of the total number of students in the post-basic university programmes.

When the number of students in post-basic programmes is taken as a proportion of total nursing enrolment, it is seen to be almost insignificant. Only since 1960 has the percentage of students enrolled in post-basic B.Sc. degree programmes exceeded one per cent of total enrolment. If the number of students in both degree and certificate courses are taken, the

TABLE 7-25 NUMBER OF STUDENTS ENROLLED IN POST-BASIC BACCALAUREATE DEGREE AND CERTIFICATE COURSES, AND PERCENTAGE OF TOTAL NURSING ENROLMENT, CANADA, 1945-1961

Year	Post-basic B.Sc. Degree		Post-basic Certificate	
	Number	Per Cent	Number	Per Cent
1945.....	75	0.62	392	3.23
1946.....	87	0.68	462	3.59
1947.....	108	0.84	383	2.96
1948.....	80	0.60	332	2.50
1949.....	86	0.61	393	2.78
1950.....	61	0.40	395	2.67
1951.....	65	0.42	379	2.45
1952.....	59	0.38	423	2.74
1953.....	79	0.51	450	2.92
1954.....	97	0.61	495	3.12
1955.....	111	0.64	534	3.07
1956.....	109	0.61	561	3.13
1957.....	130	0.70	631	3.41
1958.....	162	0.89	660	3.63
1959.....	183	0.95	671	3.47
1960.....	244	1.15	787	3.70
1961.....	235	1.03	879	3.85

SOURCE: Data provided by the Canadian Nurses' Association.

percentage of total enrolment remains below 5 per cent. To these students must be added the even smaller number of graduate students working for their Master's degree. In 1962 there were two universities in Canada, McGill University and the University of Western Ontario, offering a programme at the Master's level with a total enrolment of 24.¹ At the present time, these are the only sources of recruits for university personnel.

Although the academic qualifications of faculty members are of vital importance to the standard of instruction, it is apparently an exception in university schools of nursing for the teaching staff to have a degree beyond the master's level. In fact, 10.3 per cent have a university certificate or diploma, 42.3 per cent have a B.Sc. degree, and only 44.3 per cent have a Master's degree.²

Supply and Education of Auxiliary Nursing Personnel

Four other categories of personnel may be considered as part of the nursing occupation. These are nursing assistants, psychiatric nurses, midwives, and operating room technicians.

There has been a rapid increase in the number of nursing assistants in Canada especially during the past decade. The number rose by 169 per cent, from 6,367 in 1953 to 17,140 in 1962. This latter number was produced by 79 recognized programmes for the education of nursing assistants in the ten provinces.³ In all provinces those responsible for these programmes claim that the qualifications of the entering students are well above the acceptable minimum. Apparently many of these girls, with some tangible encouragement, might be persuaded to take the basic nursing course, and will do so, particularly if the course is shortened to two years.⁴

In the four western provinces of British Columbia, Alberta, Saskatchewan and Manitoba formal programmes are offered for the preparation of psychiatric nurses. The graduates of these three-year programmes may be licensed according to provincial acts. The programmes were instituted to meet the demand for qualified attendants to care for the mentally ill patient in mental institutions. Like the students in the nursing assistant programmes, those entering the psychiatric nurse programme in general have qualifications higher than the minimum. We foresee the disappearance of these programmes.⁵

¹ Mussallem, H. K., *op. cit.*, Chapter IV.

² *Ibid.*

³ *Ibid.*, Chapter V.

⁴ See Chapter 2, Recommendation 129 and Chapter 13.

⁵ *Ibid.*

Another category of personnel which can be considered as part of the occupation of nursing is the operating room technician. However, today, there is only one hospital, the Winnipeg General, which prepares these technicians for work outside the training hospital; a few hospitals train them for employment in their own operating rooms. The course at the Winnipeg General Hospital is limited to ten students although the Director of Nursing at this hospital states that the demand for qualified students exceeds the supply.¹

This is one category in which males should be encouraged to enter. Surgeons complain that today there is too great a turnover in the operating room team. They ask for permanent operating room technicians. Higher salaries for males would attract them to qualify and seek a permanent career as operating room technicians.²

Midwives are trained at two universities in Canada. Since 1943 the University of Alberta in Edmonton has given an advanced course to prepare district nurses for obstetrical responsibilities. This is a course of 21 weeks' duration beyond the graduate or registered nurse level. A similar course was begun at Laval University in September 1962.³ We do not foresee any great demand for midwives except in the under-doctored areas. The pattern of going to hospital for delivery is too firmly established to disturb, nor would we advocate the change.

PARAMEDICAL PERSONNEL

The various paramedical skills have become a vital element in medical care; in fact the modern physician could not function effectively without them. These occupations will be discussed in Volume II of our Report. However, the following general comments will indicate their place in the provision of medical care, and the growth in their numbers. They include the dietitian, the laboratory technician, the radiological technician, the physiotherapist, the occupational therapist, the medical record librarian, the medical social worker and others. A significant feature of the work done by paramedical personnel is that each depends upon the physician for the initiation of orders which call his or her special skills into play. Furthermore, persons performing paramedical functions are traditionally and legally prevented from assuming the physician's responsibility; they are dependent

¹ Mussallem, H. K., *op. cit.*, Chapter V.

² See Chapter 2, Recommendation 139.

³ The education of auxiliary personnel concerned with nursing is further discussed in Chapter 13.

upon him for whatever degree of responsibility for patient care is turned over to them. The skills have largely grown up within the hospital for it is here that the technology, the technical equipment such as the diagnostic and therapeutic X-ray equipment, the laboratory, the occupational therapy equipment, and a vast array of other types of complex equipment are, in the main, located. It is in the hospital, too, that most patients requiring the use of this equipment are placed. These paramedical skills, therefore, must for the most part be practised in the hospital.

Employment Trends

Like other health personnel, working in all types of hospitals, the number of paramedical personnel has rapidly increased in the past decade. Between 1953 and 1960 their numbers rose from 6,182 to 10,083, or by 63 per cent.¹ If we look at public hospitals only, we see that for the group of paramedical occupations for which data are available, the rate of increase was even greater. Table 7-26 shows that, when compared in terms of the percentage increase between 1953 and 1960, these selected paramedical occupations increased at a faster rate than the total of all professional persons

TABLE 7-26 NUMBER OF PERSONNEL IN SELECTED HEALTH OCCUPATIONS IN PUBLIC HOSPITALS AND POPULATION—PERSONNEL RATIOS, CANADA, 1953 AND 1960

Population, Occupation and Employment	1953 Number	1960 Number	Per Cent Increase 1953-1960
Canada Population.....	14,845,000	17,870,000	20.4
All Professional Persons Employed.....	371,000	578,000	55.8
Female Professional Persons Employed.....	138,000	244,000	76.8
Selected Health Occupations			
Dietitians.....	965	727	-24.7
Medical Record Librarians.....	634	713	12.5
Laboratory Technicians.....	1,774	3,786	113.4
Radiological Technicians.....	1,218	2,467	102.5
Physiotherapists.....	287	676	135.5
Occupational Therapists.....	67	138	106.0
Social Workers.....	197	274	39.1
TOTAL.....	5,142	8,781	70.8

¹ Boyd, A., *Paramedical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa, 1964, Chapter 2.

TABLE 7-26 NUMBER OF PERSONNEL IN SELECTED HEALTH OCCUPATIONS IN PUBLIC HOSPITALS AND POPULATION—PERSONNEL RATIOS, CANADA, 1953 AND 1960—*Concluded*

	Population-Selected Health Personnel Ratios	
	1953 Number	1960 Number
All Professional Persons Employed.....	2,499	3,234
Female Professional Persons Employed.....	929	1,365
Selected Health Occupations		
Dietitians.....	15,383	24,580
Medical Record Librarians.....	23,415	25,063
Laboratory Technicians.....	8,368	4,720
Radiological Technicians.....	12,188	7,244
Physiotherapists.....	51,725	26,435
Occupational Therapists.....	221,567	129,493
Social Workers.....	75,355	65,219
TOTAL.....	2,887	2,035

SOURCE: Boyd, A., *Paramedical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa, 1964.

employed. There were exceptions for some paramedical groups, notably social workers, medical record librarians, and dietitians with the last named showing a significant decrease in numbers. Since these are predominantly female occupations their percentage increase for the 1953-1960 period should be compared with the percentage increase in the female professional persons employed. While the increase for the whole paramedical group is less than that for the female professionals, the laboratory technicians, the radiological technicians, the physiotherapists, and the occupational therapists show a much greater increase. Another measure of the growth of these types of personnel is the population-personnel ratio. As Table 7-26 shows there has been an improvement in the ratio for all except two types of personnel, dietitians and medical record librarians.

According to Table 7-26 Canada's population increased by 20.4 per cent between 1953 and 1960. However, Table 7-27 shows that during the same period the average daily number of patients rose more rapidly, 38.9 per cent. On any given day in 1953 there were 11 patients for each paramedical person employed, with this proportion dropping to nine patients per paramedical person in 1960, an improvement of 22.2 per cent.

TABLE 7-27 AVERAGE DAILY NUMBER OF PATIENTS PER PERSONNEL IN SELECTED HEALTH OCCUPATIONS IN PUBLIC HOSPITALS, CANADA, 1953 AND 1960

	1953 Number	1960 Number	Per Cent Increase
Average Daily Number of Patients*.....	57,023	79,181	38.9
Selected Health Occupations			
Dietitians.....	59	109	-45.9
Medical Record Librarians.....	90	111	-18.1
Laboratory Technicians.....	32	21	52.4
Radiological Technicians.....	48	32	50.0
Physiotherapists.....	199	117	70.1
Occupational Therapists.....	851	574	48.3
Social Workers.....	289	289	0.0
TOTAL.....	11	9	22.2

*Dominion Bureau of Statistics, *Hospital Statistics*, Vol. I, Hospital Beds, 1960, Ottawa: Queen's Printer, 1962, Table 13.

SOURCE: Based on Table 7-26.

PARADENTAL PERSONNEL

The dentist, like the physician, is assisted by other workers of which there are at present three main types: the dental hygienist, the dental assistant and the dental technician.

Dental Hygienist

This is in practice a female occupation requiring university training. The first two-year course in dental hygiene was started in 1951-52 at the University of Toronto. Since that time 89 dental hygienists have been graduated. As shown in Table 7-28 two other dental schools, Dalhousie and Alberta, have also introduced this course of training and graduated their first classes in the spring of 1963.

Three other dental schools are actively considering setting up training courses of this nature. Students wishing to enter this course must meet the admission requirements of the universities concerned. The subject matter covered in the course ranges through the social sciences, the humanities, public speaking, the biological sciences, clinical and laboratory courses. Whether studies in such a wide range of subjects or a course of two years' duration is necessary in order to prepare for the duties of a hygienist is a debatable point and we deal with this subject further in Chapter 13.

The duties of the hygienist are defined by law, but what she actually does under the supervision of her employer is determined, to a large extent,

TABLE 7-28 GRADUATES AND EXPECTED GRADUATES IN DENTAL HYGIENE, CANADA, 1951-52 TO 1962-63

Year of Graduation	Dalhousie*	Toronto	Alberta*	Total
<i>Graduates</i>				
1951-52.....	—	—	—	—
1952-53.....	—	5	—	5
1953-54.....	—	6	—	6
1954-55.....	—	8	—	8
1955-56.....	—	9	—	9
1956-57.....	—	8	—	8
1957-58.....	—	14	—	14
1958-59.....	—	9	—	9
1959-60.....	—	6	—	6
1960-61.....	—	8	—	8
1961-62.....	—	16	—	16
1962-63 (preliminary).....	5	38	19	62
TOTAL.....	5	127	19	151

* First class entered 1961-62.

SOURCE: McFarlane, B.A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 6.

by his attitudes towards hygienists as a professional group in the practice of dentistry, and by the demands made upon him by his patients. The formal duties of the hygienist fall into four categories:

- (i) professional-clinical service;
- (ii) technical-mechanical;
- (iii) clerical-administrative, and
- (iv) educational.¹

Professional-clinical service is defined in the provincial legislation governing the professional activities of the hygienist. This includes dental prophylaxis—the scaling and polishing of the patient's teeth; the application of topical fluorides; and “taking of impressions of the mouth from which artificial dentures can be made”.² The technical-mechanical functions include the taking and mounting of dental X-rays, the cementing and facing of pontics, and making minor adjustments to prosthetic appliances.³ The clerical-administrative duties involve those office procedures which make the administrative aspects of the practice of dentistry more efficient. The educational function includes teaching individual patients and the public at large the proper care of the teeth. The total numbers graduated in the past dozen years indicate that few dentists make use of this type of auxiliary service.⁴

¹ McFarlane, B. A., *op. cit.*, Chapter 6.

² Dunn, W. J., “Manpower in Dentistry—The Dental Hygienist”, in *Canadian Dental Association Journal*, Vol. 27, January 1961, p. 19.

³ McFarlane, B. A., *op. cit.*, Chapter 6.

⁴ The future supply of dental auxiliaries is contained in Chapter 13.

Dental Assistant

Although few dentists employ dental hygienists, a large proportion employ dental assistants, of which there were approximately 4,700 full-time and 300 part-time in 1962. These assistants are of two types: the secretary-receptionist and the chair-side assistant. The majority have had no formal training for their duties although they have been given on-the-job training. The others have received some kind of formal training as a dental assistant, dental nurse, dental hygienist, or registered nurse.¹

Dental Technician

The dental technician undertakes “. . . extra-oral technical services involved in the fabrication of prosthesis and appliances *on the basis of written prescriptions from the dentist*”.² This separation of certain technical functions from the professional role of the dentist has led to problems of the control of the technician by the dentist. In some provinces dental technicians have tried to deal directly with the public rather than through the dentists, but only in Alberta have they been granted this right. Most of the technicians trained in Canada learned their skill through on-the-job training with a technician already in practice. Some provincial associations have organized part-time and evening classes for dental technician trainees.

There is no doubt that the utilization of dental auxiliaries can appreciably increase the productivity of dentists. Table 7-29 shows that there

TABLE 7-29 MEAN NUMBER OF PATIENTS AND MEAN NUMBER OF PATIENT-VISITS BY NUMBER OF EMPLOYEES, U.S.A., 1962

Number of Employees		Mean Number of Patients	Mean Number of Patient-Visits
Full-Time	Part-Time		
0	0	742	2,272
0	1	710	2,376
0	2	1,095	2,742
1	0	1,166	3,014
1	1	1,242	3,182
1	2	1,404	3,237
2	0	1,530	3,174
2	1	1,607	4,005
3	0	1,931	3,929

SOURCE: McFarlane, B. A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 6.

¹ McFarlane, B. A., *op. cit.* Chapter 6.

² Moen, B. Duane, "Survey of Present and Future Needs for Dental Manpower" in *Proceedings of the Workshop on the Future Requirements of Dental Manpower and the Training and Utilization of Auxiliary Personnel*, University of Michigan (*The Michigan Study*), W. K. Kellogg Foundation Institute, 1962, p. 148.

is a direct relationship between the number of para-dental workers and the number of patients and patient-visits.

Surveys conducted by the Canadian Dental Association have shown that average net income is related to the number of dental chairs and the employment of assistants. According to Table 7-30, however, there is an optimum. The highest mean net income was earned by dentists with three chairs and two assistants, one working as a chair-side assistant and one working as a secretary-receptionist. With this overhead the dentists' net income is about 50 per cent of gross income.¹

Dental Auxiliaries

In New Zealand a programme of dental services for children has relied upon the school dental nurse to increase the supply of dental services.

TABLE 7-30 MEAN INCOME OF DENTISTS, NUMBER OF CHAIRS AND EMPLOYEES, CANADA, 1958

Number	Mean Gross Income	Mean Expense	Mean Net Income	Net as Per Cent of Gross
	\$	\$	\$	
1 Chair, No Employees.....	10,165	3,929	5,917	58.2
1 Chair, 1 Secretary or Receptionist.....	16,978	7,276	9,586	56.5
1 Chair, 1 Assistant.....	18,388	7,944	9,933	54.0
2 Chairs, No Employees.....	13,909	5,519	7,186	51.7
2 Chairs, 1 Secretary or Receptionist.....	22,728	10,085	11,782	51.8
2 Chairs, 1 Assistant.....	23,163	9,938	11,910	51.4
2 Chairs, 1 Assistant and 1 Secretary or Receptionist.....	26,717	12,075	13,514	50.6
2 Chairs, 2 Assistants.....	27,535	12,230	15,231	55.3
2 Chairs, 1 Technician and One or Two of Following: Assistants, Secretaries or Receptionists.....	26,621	11,295	14,996	56.3
2 Chairs, 1 Hygienist and 1 or 2 of the Following: Assistants, Secretaries or Receptionists.....	29,086	13,670	15,415	53.0
3 Chairs, 1 Assistant.....	28,485	12,622	15,003	52.7
3 Chairs, 2 of the Following: Assistants, Secretaries or Receptionists.....	31,492	14,323	15,768	50.1
3 Chairs, 1 Hygienist and 1 or 2 of the Following: Assistants, Secretaries or Receptionists.....	27,223	13,262	13,960	51.3
4 Chairs, 1 or More Employees Other than Dentists.....	40,876	28,975	11,907	29.1
4 Chairs, 1 Dentist and 1 or more other Employees.....	—	—	—	—

SOURCE: McFarlane, B. A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 6.

¹ McFarlane, B.A., *op. cit.*, Chapter 6.

These dental nurses are trained and employed by the Department of Health which is responsible for the school dental clinics. Since this training programme has met with success, we think a discussion of some aspects of its operation may be helpful.

Girls over 17 years of age holding a school certificate, which is not equivalent to university entrance, are recruited for a two-year programme. Of the total of 1,608 training hours, the student spends 824 hours in the first year, and 784 in the second. In the first year, lectures take up 36 per cent of the time, and laboratory instruction 64 per cent. In the second year, 11 per cent of the time is spent in lectures, and 89 per cent in clinical instruction and practice. On successful completion of the course the school dental nurse, working under the direction of a dentist, may perform ". . . examinations, prophylaxis, fillings, extractions, gum treatments, and dental health education for elementary school children".¹

A similar programme is now being tried on an experimental basis in the United Kingdom. This programme ". . . designed to ascertain the value of such auxiliaries, is being undertaken by the General Dental Council in accordance with the provisions of the Dentists Act, 1957".² The dental auxiliaries are given responsibilities similar to those of the New Zealand School Dental Nurse:

"3. Subject to the provisions of these regulations, a dental auxiliary shall be permitted to carry out dental work amounting to the practice of dentistry of the following kinds:

- (a) extracting deciduous teeth under local infiltration anaesthesia;
- (b) undertaking simple dental fillings;
- (c) cleaning and polishing teeth;
- (d) scaling teeth (that is to say, the removal of tartar, deposits, accretions and stains from those parts of the surfaces of the teeth which are exposed or which are directly beneath the free margins of the gums, including the application of medicaments appropriate thereto);
- (e) the application to the teeth of solutions of sodium or stannous fluoride or such other similar prophylactic solutions as the Council may from time to time determine;
- (f) giving advice within the meaning of subsection (1) of section thirty-three of the Dentists Act, 1957, such as may be necessary to the proper performance of the dental work referred to in this regulation, and on matters relating to oral hygiene;

¹ Fulton, J. T., *Experiment in Dental Care*, World Health Organization Monograph Series, Geneva: World Health Organization, 1951, p. 84.

² Great Britain, *The Health of the School Child*, Report of the Chief Medical Officer of the Ministry of Education for the years 1960 and 1961, London: H.M.S.O., 1962, p. 186.

but shall not be permitted to carry out dental work amounting to the practice of dentistry of any other kind.

"4. A dental auxiliary shall not be permitted to carry out dental work amounting to the practice of dentistry except

- (a) in the course of providing national or local authority health services;
- (b) under the direction of a registered dentist; and
- (c) after the registered dentist has examined the patient and has indicated to the auxiliary the specific treatment to be provided for the patient by the said auxiliary."¹

The two programmes, although one is still in the experimental stage, provide evidence that auxiliary personnel can be recruited and trained to undertake many of the routine functions of the dentist.²

TABLE 7-31 PERCENTAGE OF TOTAL UNDERGRADUATE PHARMACY STUDENT ENROLMENT TO TOTAL UNDERGRADUATE ENROLMENT IN ALL CANADIAN UNIVERSITIES AND COLLEGES, 1947-48 TO 1961-62

School Year	Total Undergraduate Pharmacy Enrolment	Total Undergraduate Enrolment in Canada	Per Cent
1947-48.....	1,271	76,896	1.65
1948-49*.....	1,111	66,679	1.67
1949-50.....	1,432	62,846	2.28
1950-51.....	1,383	59,160	2.34
1951-52.....	1,355	57,301	2.36
1952-53.....	1,367	56,589	2.42
1953-54.....	1,256	57,961	2.17
1954-55.....	1,212	62,291	1.95
1955-56.....	1,198	66,177	1.81
1956-57.....	1,145	72,629	1.58
1957-58.....	1,100	80,443	1.37
1958-59.....	1,219	88,010	1.39
1959-60.....	1,307	94,928	1.38
1960-61.....	1,482	105,911	1.40
1961-62.....	1,529	121,547	1.26

*Excluding University of Montreal.

SOURCE: Dominion Bureau of Statistics, *Fall Enrolment in Universities and Colleges*, 1947 to 1961 editions, Ottawa: Queen's Printer.

¹ Great Britain, Statutory Instruments 1961 No. 1365, *The Dental Auxiliaries Regulations*, 1961, 5 & 6 Eliz. 2. c. 28.

² This point is discussed further in Chapter 13.

PHARMACEUTICAL PROFESSION

In North America the traditional form in which pharmacy is practised is the pharmacist dispensing prescribed drugs in a retail store. There is a marked dichotomy between the independent retail pharmacist and the salaried pharmacist who practises his profession as an employee of a drug store chain, the hospital, the drug manufacturer, the university, or the government.

In recent years the population-pharmacist ratio for Canada improved slightly; in 1962 it stood at 2,026. The most important sources of supply are the faculties and schools of pharmacy in Canadian universities. As Table 7-31 indicates, total undergraduate pharmacy enrolment increased significantly in the period 1947-48 to 1961-62, but this increase was insufficient to bring about any more than a small improvement in the population-pharmacist ratio.

TABLE 7-32 INTERNATIONAL COMPARISON, POPULATION PER PHARMACIST, CANADA AND SELECTED COUNTRIES, 1959

Country	Population per Pharmacist
Germany: Federal Republic.....	1,106
United States.....	1,470
New Zealand.....	1,474
Italy.....	1,603
Belgium.....	1,729
Denmark.....	2,218
France.....	2,379
England and Wales.....	2,654
Canada.....	2,831*
Austria.....	3,288
Greece.....	3,932
Portugal.....	4,207
Spain.....	4,351
Norway.....	4,710
Finland.....	5,099
Sweden.....	9,318

*Data refer to 1961.

SOURCE: Compilation based on data from World Health Organization, *Annual Epidemiological and Vital Statistics 1959*, Geneva: the Organization 1962, p. 654-695, and *Demographic Yearbook, 1960*, New York: United Nations, 1961, pp. 104-115.

Since immigration is not an important source of supply, any improvement in this ratio must come from an increase in the undergraduate pharmacy student enrolment.

Table 7-32 presents an international comparison of the population-pharmacist ratio for Canada and selected countries. Canada is situated roughly half-way in the array.

To determine if improvement in the population-pharmacist ratio is necessary requires an analysis of the supply of and demand for this member of the health team. This will be found in Volume II of our Report.

OPTOMETRISTS

The optometrist measures a person's vision according to a prescribed standard, advises on the correction of visual defects and supplies appropriate spectacles. According to the medically qualified ophthalmologist, however, anyone who requires an eye examination should be examined by a physician because many symptoms of serious general diseases can be revealed in the eye and the optometrist is not qualified to recognize these. The optometrists, on the other hand, maintain that they do recognize many diseases and refer these to the eye physicians. This debate between the medical profession and the optometrists still goes on.

Since eye care is such an important element in the health of our population, some means of resolving the issues involved must be found. We have made recommendations to this effect in Chapter 2.¹ Here we are concerned with the assessment of the type and extent of optometrical services in Canada.

A brief review of the literature dealing with the evidence of eye disease, and disease as manifested in the eye, indicates that they affect less than five per cent of the population.² But the proportion of the population re-

¹ Recommendation 91.

² Sydenstricker, E., and Britten, R. H., "The Physical Impairments of Adult Life". General Results of a Statistical Study of Medical Examinations by the Life Extension Institute of 100,924 white male life insurance policyholders since 1921. *American Journal of Hygiene*, Vol. II, 1930.

The Department of National Health and Welfare and The Dominion Bureau of Statistics, *Illness and Health Care in Canada*, Ottawa: Queen's Printer, 1960, Table 3, p. 100.

Blum, H. L., Peters, H. B., and Bettman, J. W., *Vision Screening for Elementary Schools*, The Orinda Study. Berkeley and Los Angeles: University of California Press, 1959.

Department of Health, Levine, M. H., Smith, M. D., Kitching, J. S., *Study of Vision Testing Procedures*, Hamilton: Division of School Health Services, A Statistical Survey of 56,122 Case Records of Employees in Royal Ordnance Factories Examined by Ophthalmic Opticians, 1943-46. The Association of Optical Practitioners, 65 Brook St., London, W1., 1947.

Kintner, G. F., "Optometry's Role in Health Maintenance—A Study of Referrals", *American Journal of Public Health*, Nov. 1961.

Baker, I., "A Statistical Study of Optometric Patients", *Canadian Journal of Optometry*, Vol. 23, Dec. 1961.

TABLE 7-33 NUMBER OF PRACTISING LICENSED OPTOMETRISTS IN CANADA BY PROVINCE 1931, 1941, 1951 AND 1961

Province	Year				Per Cent Change				Population per Optometrist			
	1931	1941	1951	1961	1931-61	1931-41	1941-51	1951-61	1931	1941	1951	1961
	—	—	—	6	—	—	—	—	—	—	60,236	76,308
Newfoundland	—	—	—	—	—	—	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—	—	—	—	—	—	—
Nova Scotia	60	65	45	38	-36.7	-8.3	-30.8	-15.6	8,547	8,891	14,279	19,394
New Brunswick	39	42	49	44	+12.8	+7.7	+16.7	-10.2	10,467	10,890	10,524	13,589
Quebec	230	262	306	420	+82.6	+13.9	+16.8	+37.3	12,498	12,717	13,253	12,521
Ontario	625	646	665	533	-14.7	+3.4	+2.9	-19.9	5,490	5,863	6,913	11,699
Manitoba	34	51	57	60	+76.5	+50.0	+11.8	+5.3	20,592	14,308	13,623	15,361
Saskatchewan	53	52	63	70	+32.1	-1.9	+21.2	+11.1	17,392	17,230	13,202	13,216
Alberta	91	102	108	112	+23.1	+12.1	+5.9	+3.7	8,039	7,805	8,699	11,892
British Columbia	108	101	139	141	+30.6	-6.5	+37.6	+1.4	6,428	8,097	8,382	11,553
TOTAL	1,240	1,321	1,438	1,424	+14.8	+6.5	+8.9	-1.0	8,368	8,711	9,742	12,807

SOURCE: Data provided by Canadian Association of Optometrists.

quiring some form of eye care, whether for disease or some other eye defect, is much higher. The Canadian Association of Optometrists has estimated that in a population of 17 million in 1960 a total of 8.8 million or 51.7 per cent required vision care. According to the Association 8.3 per cent of the Canadian population received a refraction from an optometrist in 1960.¹ This proportion is substantially higher than the 3.3 per cent reported in the Canadian Sickness Survey of 1951. Of the 8.3 per cent, 88 per cent were provided with glasses.

In order to practise as an optometrist in Canada, a person must be a graduate of an accredited institute and have passed the examination requirements of the provincial Board of Examiners in Optometry. The accredited institutions consist of two schools of optometry in Canada; the College of Optometry of Ontario, and L'École d'optométrie, Université de Montréal, and a number of similar institutions in the United States, some of which are affiliated with schools or departments of universities.²

The number of practising licensed optometrists is shown in Table 7-33. Despite a more than 75 per cent increase in population between 1931 and 1961, the optometrists increased by only 184 or 14.8 per cent. As a result, the population-optometrist ratio rose from 8,368 to 12,807.

A further analysis of the supply of and demand for optometrists will be found in Volume II of our Report.

CURRENT SUPPLY OF HEALTH PERSONNEL

Health Personnel in Canada

In this chapter we have presented a brief description, both historical and current, of the changing supply of the various categories of health personnel, indicating the sources of supply, sources of new recruits, the operation of the educational programmes, the organization of practice, and the place of paramedical and paradental personnel. Our future requirements for the various types of health personnel, and problems associated with meeting these requirements are analysed in Chapter 13.

That there has been a substantial increase in the number of health personnel in Canada can be seen in Table 7-34 where the available data relating to the supply of physicians, dentists, nurses and pharmacists have been brought together. On the other hand, the population-personnel ratios have increased much less rapidly. Despite the sizeable inflow of physicians

¹ *The Canadian Association of Optometrists*, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 25.

² *Ibid.*

from other countries in the nineteen fifties, the population-physician ratio has not declined by a substantial amount from the level reached early in the century while the population-dentist ratio has actually risen. The population-nurse ratio has improved but this must be measured against the increased responsibilities of nurses, consequent on the expansion of hospital care.

International Comparisons

We have also presented in this chapter a comparison of health personnel available in different countries using for purposes of illustration ratios of population per physician, per dentist, per nurse, and per pharmacist. We have brought together the relevant data in Table 7-35 which serves to indicate in broad terms Canada's international position in providing health services.¹

TABLE 7-34 POPULATION PER PHYSICIAN, DENTIST, NURSE, AND PHARMACIST, CANADA, SELECTED YEARS, 1901-1961

Year	Physicians		Dentists		Nurses		Pharmacists	
	Number	Popula- tion- Physi- cian Ratio	Number	Popula- tion- Dentist Ratio	Number	Popula- tion- Nurse Ratio	Number	Popula- tion- Pharm- acist Ratio
1901.....	5,475	972	1,310	4,100	—	—	—	—
1911.....	7,411	970	2,183	3,301	—	—	—	—
1921.....	8,706	1,008	3,158	2,783	—	—	—	—
1931.....	10,020	1,034	4,039	2,569	—	—	—	—
1941.....	11,873	968	4,210	2,733	21,171	544	—	—
1946.....	—	—	4,565	2,644	—	—	—	—
1951.....	14,325	976	4,912	2,791	35,129	399	—	—
1956.....	17,871	928	5,416	2,898	—	—	—	—
1961.....	21,290	857	5,865	3,108*	61,699	296	8,877	2,055

* See Table 7-11.

SOURCE: Tables 7-1, 7-11, 7-15; McFarlane, B. A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Table 2-1; *The Canadian Pharmaceutical Association, Inc.*, brief submitted to the Royal Commission on Health Services, Toronto: May 1962, Table I.

¹The data are based on reports from the respective national agencies. Although efforts were made to obtain consistency in the coverage reported, it is possible that differences in the ratios are due to different concepts rather than actual differences (e.g., the counting of personnel who are qualified but not practising or those in administrative positions). Therefore figures collected routinely by international agencies will give a satisfactory general picture but complete consistency of the underlying concepts and statistical practices must be ensured before interpreting the data, especially minor differences.

TABLE 7-35 INTERNATIONAL COMPARISON, POPULATION PER PHYSICIAN, DENTIST, NURSE, AND PHARMACIST, SELECTED COUNTRIES, 1959

Country	Population Per			
	Physician	Dentist	Nurse	Pharmacist
Australia.....	860	2,429	—*	—*
Austria.....	620	1,762	453	3,288
Belgium.....	800	6,784	—	1,729
Canada.....	920	3,032	255	2,831†
Denmark.....	830	2,006	277	2,218
England and Wales.....	960	3,947	471	2,654
Finland.....	1,600	2,522	278	5,099
France.....	950	3,006	536	2,376
Germany: Federal Republic.....	730	566	136	1,106
Greece.....	—	2,550	1,207	3,932
Italy.....	620	—	952	1,603
Luxembourg.....	910	—*	—*	—*
Netherlands.....	900	4,294	815	—*
New Zealand.....	700	2,209	215	1,474
Norway.....	900	1,528	366	4,710
Portugal.....	1,300	74,205	2,799	4,207
Spain.....	1,000	2,915	—	4,351
Sweden.....	1,100	1,497	122	9,318
Switzerland.....	740	2,413	249	—*
United States.....	790	1,919	294	1,470

*Not available.

†Data related to 1961.

SOURCE: Tables 7-3, 7-10, 7-16 and 7-32.

The statistics, however, do not tell the full story. For a more complete comprehensive international comparison we would require an analysis of many other factors; geographic, economic, social and institutional, e.g., density of population, effectiveness of transportation and communication systems, topography of the country, etc. Further, a lower ratio in one area of health services may be offset to some extent by a higher ratio of health services in another sector. For example, the Canadian ratio of persons per physician, 920, appears to be less favourable than the United States ratio, 790.¹ But Canada had a more favourable ratio than the United States in terms of population per nurse, 255 against 294, as well as population per hospital bed.²

¹ It should be noted that the data presented in Table 7-35 relate to the year 1959. Since that date the population-physician, dentist and nurse ratios in Canada have improved.

² 90 against 110 in 1959 (See Table 5-5).

Bearing in mind these qualifications, of the population-personnel ratios for 20 countries noted in Table 7-35, Canada ranks in the lower third for physicians (13th), and dentists (14th), in the middle third for pharmacists (9th), and in the highest third for nurses (5th). Alternatively, it is of particular interest to note that Canada's ratio of population per physician of 920 is ahead of the ratio indicated for countries that have comprehensive pre-paid government supported programmes of medical care such as France, 950, the United Kingdom, 960,¹ and Sweden 1,100. The data support the suggestion which we have put forward earlier² that in proceeding with a comprehensive programme for health services a country does not have to wait until shortages of health personnel have been fully met.

¹ The figures relate to England and Wales.

² See also Chapter 1.

Health Facilities and Services

A major element in the health services complex is the hospital. In this chapter we show the growth of these institutions—general and allied special hospitals, mental institutions, and tuberculosis sanatoria—in terms of beds and their utilization. Past and current developments in the organization of mental health facilities are outlined, and the effect of present trends on the demand for mental and tuberculosis facilities is discussed.

Two other important elements in the health services complex are described: the various government health services, and the voluntary health services, both of which support the health programmes of the community. We also describe the services provided for selected groups such as the armed services, veterans, Indians, and Eskimos, and the problems associated with the provision of adequate health services in remote areas.

The emergence of modern diagnostic and treatment methods has increased the importance of the clinical aspects of hospital care so that today access to the equipment and services of the modern hospital is indispensable to high quality general practice. At the same time, there has been a parallel movement towards making the hospital the domain of the specialist. In Canada there is not the rigid distinction between the functions of the general practitioner and the specialist with regard to the hospital service that is found under the British National Health Service, nevertheless, there is a definite attempt on the part of the hospitals to control the quality of the work and the academic qualifications of employees and staff practitioners. Ostensibly many hospitals require the accreditation of a practitioner in the relevant speciality before he is allowed to treat his patient in the hospital; within the accredited hospital staff, internal audits aim at checking the quality of work. With this growing emphasis on the need for specialist qualifications in the hospital, an increasing number of physicians appear to feel that group practice combining the skills of general practitioners and specialists, is the organization best suited to render optimum patient care, and to ensure some kind of continuity between home and hospital for the patient.

HOSPITALS

The above discussion emphasizes the link between the physician practising in the community and the hospital. There is evidence to suggest that the relationship between the aggregate of hospital beds and physicians' services is inverse. Thus Ontario, which has a relatively high population-physician ratio has fewer hospital beds per 1,000 population than Saskatchewan where the ratio is low. This example serves to emphasize the fact that national data may not tell the whole story of the full range of medical services received by the population; the pattern varies depending on such factors as differentials in provincial levels of income and variations in the regional topography and the number and distribution of population.

Table 8-1 shows that by the end of 1960, total hospital beds numbered about 192,000 or 10.8 beds per 1,000 population. The over-all bed-population ratio moved up from 10.9 in 1948 to 11.6 beds per 1,000 population in the year 1956, but declined to 11.2 in 1958 and to 10.8 in 1960.¹ Most of this drop can be attributed to stabilization of the number of mental hospital beds and to a sharp decline in the number of beds in tuberculosis sanatoria.

In general, tuberculosis sanatorium facilities are now more than adequate for current requirements. A very substantial expansion has occurred in general and allied special hospital beds for treatment of acute disease. Shortages are still apparent in the areas of chronic-convalescent facilities and in the area of psychiatric care and physical medicine.

General and Allied Special Hospitals

Hospital construction has been concentrated in large urban hospitals, which have been acquiring a greater proportionate share of new hospital beds. For example, among public general hospitals, institutions with 500 beds or more had 26 per cent of all beds, cribs, and bassinets in 1948, and 29 per cent in 1960, while the share of hospitals under 100 beds declined from 29 per cent to 22 per cent. Alternately the proportion of hospital beds in hospitals of 200 beds and over increased from 54 per cent in 1948 to 58 per cent in 1960.

¹ The distribution of beds in 1960 shown in Table 8-1 is based on distribution by hospitals. Thus beds located in tuberculosis hospitals but used for the treatment of the chronically ill, or mentally ill, are shown as tuberculosis beds. In Table 14-5 the estimated number of beds for 1961 has been distributed according to their usage. Thus beds in tuberculosis hospitals include only those beds which are used for tuberculous patients. Beds used for the chronically ill or the mentally ill have been included with general hospital and allied special hospital beds.

TABLE 8-1 ESTIMATED BEDS SET UP, TOTAL AND PER 1,000 POPULATION, BY CLASS OF HOSPITAL* CANADA, 1948-1960, AND BY PROVINCES, 1960

Year	Gen. and Allied Spec. Hosp.**		Mental Hospitals†		Tuberculosis Sanatoria††		All Hospitals	
	Total Beds	Beds per 1,000 Pop.	Total Beds	Beds per 1,000 Pop.	Total Beds	Beds per 1,000 Pop.	Total Beds	Beds per 1,000 Pop.
1948.....	75,582	5.9	51,050	4.0	12,642	1.0	139,274	10.9
1949.....	81,482	6.1	52,663	3.9	14,058	1.0	148,203	11.0
1950.....	84,630	6.2	53,957	3.9	15,766	1.1	154,353	11.3
1951.....	87,172	6.2	55,395	4.0	16,450	1.2	159,017	11.4
1952.....	87,460	6.0	57,621	4.0	16,586	1.1	161,667	11.2
1953.....	92,861	6.3	60,887	4.1	16,783	1.1	170,531	11.5
1954.....	97,585	6.4	62,606	4.1	15,967	1.0	176,158	11.5
1955.....	101,116	6.4	64,163	4.1	15,616	1.0	180,895	11.5
1956.....	106,216	6.6	65,260	4.1	15,333	1.0	186,809	11.6
1957.....	107,115	6.4	65,786	4.0	14,662	0.9	187,563	11.3
1958.....	109,504	6.4	67,190	3.9	13,760	0.8	190,454	11.2
1959.....	107,918	6.2	66,724	3.8	12,770	0.7	187,412	10.7
1960—CANADA.....	112,649	6.3	67,895	3.9	11,618	0.6	192,162	10.8
Newfoundland.....	1,964	4.4	913	2.0	548	1.2	3,425	7.6
Prince Edward Island.....	649	6.3	298	2.9	90	0.9	1,037	10.1
Nova Scotia.....	4,003	5.5	2,356	3.2	510	0.7	6,869	9.4
New Brunswick.....	3,593	6.1	1,864	3.2	612	1.0	6,069	10.3
Quebec.....	29,369	5.7	19,648	3.8	3,477	0.7	52,494	10.2
Ontario.....	38,756	6.3	23,458	3.8	2,824	0.5	65,038	10.6
Manitoba.....	6,588	7.3	3,848	4.2	717	0.8	11,153	12.3
Saskatchewan.....	7,483	8.2	4,366	4.8	662	0.7	12,511	13.7
Alberta.....	9,390	7.3	4,871	3.8	1,083	0.8	15,344	11.9
British Columbia.....	10,289	6.4	6,273	3.9	887	0.6	17,449	10.9
Yukon.....	157	11.2	—	—	—	—	157	11.2
Northwest Territories.....	408	18.5	—	—	208	9.5	616	28.0

* Includes public, private, and federal hospitals, as well as estimates for non-reporting hospitals from 1952 on. Bassinets are excluded.

** From 1948 to 1958 includes public, private, and federal hospitals with data adapted from Dominion Bureau of Statistics, *Annual Reports of Hospitals*, 1948-1952, Ottawa: Queen's Printer, and *Hospital Statistics*, 1953-1958, Vol. I, Ottawa: Queen's Printer. From 1959 to 1960 includes budget review, contract, and federal hospitals, using list of such hospitals at time of entry into hospital insurance programme from provinces and territories not participating during one or both years in question, with data compiled by Research and Statistics Division from Annual Returns of Hospitals. From 1952 to 1958—includes estimates of beds in non-reporting hospitals as follows: 1952—2,466 beds; 1953—5,145 beds; 1954—6,658 beds; 1955—2,863 beds; 1956—2,910 beds; 1957—2,304 beds; 1958—2,679 beds. Also includes estimated beds set up in Newfoundland hospitals from 1949 to 1952 as follows: 1949—1,536 beds; 1950—1,608 beds; 1951—1,679 beds; 1952—1,751 beds. In 1958, deduction was made of 3,195 Quebec beds not considered to be hospital beds.

† Adapted from Dominion Bureau of Statistics, *Mental Institutions*, 1948-1952, Ottawa: Queen's Printer, based on number of patients in mental hospitals at the end of each year, and *Mental Health Statistics*, 1953-1960, Ottawa: Queen's Printer, based on average daily in-patient population for each year. Newfoundland included from 1949 on.

†† Adapted from Dominion Bureau of Statistics, *Tuberculosis Institutions*, 1948-1952, Ottawa: Queen's Printer, and *Tuberculosis Statistics*, 1953-1960, Ottawa: Queen's Printer. Newfoundland included from 1949 on.

SOURCE: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962.

Beds in general and allied special hospitals may be classified in terms of the broad class of patients accommodated. Acute hospitals provide treatment largely to patients with short-term conditions; such hospitals include general hospitals as well as special hospitals or units for maternity, infectious diseases, paediatrics, orthopaedics, some psychiatric, and other acute conditions. Chronic hospitals provide special care under medical supervision for the long-term patients; they include beds designated as chronic, convalescent, geriatric or rehabilitation beds. Federally operated acute and chronic hospitals may be considered as a third group within the category of general and allied special hospitals. In making comparisons between provinces it is necessary to recognize that patients with long-term conditions are treated in active treatment hospitals, and in some cases in tuberculosis hospitals. Thus a high rate of active treatment beds per 1,000 persons may not necessarily mean that all of these beds are occupied by short-term patients since, due to scarcities of chronic or convalescent hospital beds, or alternative accommodation, it may be necessary to accommodate long-stay or domiciliary care patients in short-stay hospitals.

ACUTE TREATMENT BEDS

The growth in the number of acute treatment beds is evident from Table 8-2. While the actual number of these beds has shown a significant increase in every province, over the period 1948 to 1960 the picture is different when viewed in terms of the number of beds per 1,000 population.¹ In these terms Prince Edward Island with an increase from five to six outstripped every other province. Other provinces also showed an increase except Alberta and British Columbia. These two provinces recorded a decrease in the number of acute treatment beds per 1,000 population of 0.4 and 0.2 respectively.

A rough measure of the degree of overcrowding in hospitals can be gained by the ratio of "beds set up" to "rated bed capacity". In nine provinces in which fairly accurate data are available, the combined margin of beds (active treatment) set up over rated bed capacity declined from 15 per cent to 5 per cent from 1948 to 1958, and to 4 per cent in 1960. The comparatively low excess of beds set up over rated bed capacity in 1960, characteristic of most provinces, indicates that, broadly speaking, some measure of equilibrium was being achieved between the demand for hospital care and the supply of adequate facilities. Still, there remain a number of communities where the length of the persistent waiting lists may suggest

¹ Data for 1960 are the latest data available on a comprehensive basis at the beginning of 1964, another indication of the delay involved in obtaining up to date information in an important sector of the health field. Partial data available for 1961 and 1962 suggest that the trends referred to above have not changed significantly.

TABLE 8-2 ACUTE TREATMENT HOSPITAL BEDS*: ESTIMATED BEDS SET UP, BY PROVINCE, SELECTED YEARS, 1948-1960.

Province	Dec. 31, 1948**		Dec. 31, 1953†		Dec. 31, 1958††		Dec. 31, 1959 ^a		Dec. 31, 1960 ^a	
	Total	Per Thousand Popula- tion	Total	Per Thousand Popula- tion	Total	Per Thousand Popula- tion	Total	Per Thousand Popula- tion	Total	Per Thousand Popula- tion
Newfoundland.....	1,402	4.1	1,573 ^b	4.1	1,760	4.1	1,702	3.9	1,762	3.9
Prince Edward Island.....	468 ^c	5.0	580	5.7	642	6.4	619	6.1	622	6.0
Nova Scotia.....	2,588	4.1	2,993	4.5	3,370	4.8	3,445	4.8	3,462	4.8
New Brunswick.....	2,338	4.7	2,403	4.5	2,751	4.8	2,938	5.0	3,048	5.2
Quebec.....	13,828	3.6	16,700	3.9	21,824	4.5	21,421	4.3	22,639	4.4
Ontario.....	18,302	4.3	23,050	4.7	26,483	4.5	28,401	4.8	30,384	5.0
Manitoba.....	3,424	4.6	4,085	5.0	4,778	5.5	4,733	5.3	4,951	5.5
Saskatchewan.....	5,752	6.9	6,119	7.1	6,863	7.7	6,847	7.5	6,815	7.4
Alberta.....	5,637	6.6	6,735	6.7	7,800	6.5	7,853	6.3	7,956	6.2
British Columbia.....	6,056	5.6	7,343	5.9	8,154	5.3	8,467	5.4	8,714	5.4
CANADA ^d	59,795	4.7	71,581	4.8	84,425	4.9	86,426	5.0	90,353	5.1

*Includes non-federal public and private hospital beds exclusive of chronic and convalescent beds and tuberculosis units but including psychiatric units. Excludes bassinets. Estimates were made for hospitals not reporting to the Dominion Bureau of Statistics.

**Based on provincial health survey reports except where otherwise indicated.

†Adapted from Dominion Bureau of Statistics *Hospital Statistics, 1953*, Vol. I, Ottawa: Queen's Printer, 1955, except where otherwise indicated.

††Adapted from Dominion Bureau of Statistics *Hospital Statistics, 1958*, Vol. I, Ottawa: Queen's Printer, 1960, except where otherwise indicated.

^aIncludes budget review and contract hospitals, using list of such hospitals at time of entry into hospital insurance programme for provinces not participating during one or both years in question, with data compiled by Research and Statistics Division from Annual Returns of Hospitals.

^bBased on data supplied by provincial health department.

^cBased on Dominion Bureau of Statistics, *Annual Report of Hospitals, 1948*, Ottawa: King's Printer, 1951.

^dExcludes Northwest Territories and Yukon.

SOURCE: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962 (unpublished report).

shortages of hospital accommodation, or alternatively possible inefficient utilization of existing hospital bed facilities or lack of a home care programme.¹

CHRONIC AND CONVALESCENT BEDS

There is considerable difficulty in determining the actual number of beds properly considered as belonging to chronic hospitals, or to chronic units of general hospitals.

Table 8-3 shows that the number of chronic beds reported at the end of 1960 declined by about 2,000 from the level two years earlier. This apparent drop was caused mainly by reclassification of various "private hospital beds" to the category of nursing home beds because they were not considered as hospital facilities by provincial hospital insurance authorities.

HOSPITAL UTILIZATION

The growth in the use of these facilities is evident in Table 8-4. In every province there was a substantial increase in the number of admissions, and, more important still, in the number of admissions per 1,000 population. In Canada between 1948 and 1961 admissions per 1,000 population rose from 111 to 149 but there was wide variation among provinces in this regard. At the beginning of this period the admission rate was highest for the three western-most provinces, Saskatchewan with 172, Alberta with 169 and British Columbia with 145. In 1961 Saskatchewan still had the highest rate with 212, and Alberta remained second highest with 190. Instead of British Columbia, however, New Brunswick was third highest with 168, closely followed by British Columbia with 167. Ontario with 144 was slightly below the national average, and Quebec with 127 also had a lower than average ratio. Although Quebec had the second lowest admission rate² in 1961, the percentage increase since 1948, 69.3 per cent, was about double the national average, 34.2 per cent.

An important factor influencing the volume of hospital care is the average length of hospital stay of patients. Between 1948 and 1961 there was a slight downward change in this figure in some years, but the 10 days in 1961 was the same as the 1948 figure. This national figure does not indicate the rather wide changes which occurred in some provinces, nine of which

¹ *The Regina Grey Nuns' Hospital*, brief submitted to the Royal Commission on Health Services, Regina, January 1962. *Associated Hospitals of Alberta*, Supplement to the brief submitted to the Royal Commission on Health Services, Edmonton, February 1962. *Vancouver General Hospital, The Development and Utilization of Some Services of the Vancouver General Hospital*, Vancouver: The Hospital, 1962. *Government of Manitoba*, brief submitted to the Royal Commission on Health Services, Appendix 10, Winnipeg, January 1962.

² After Newfoundland.

showed a decline. Of these nine provinces, Newfoundland, Prince Edward Island and Quebec¹ showed the largest declines. Ontario with a rise of 0.6 days was the only province to show an increase.

There has been then, at least since 1948, an increase in the hospital admission rate but relatively little change in the average length of hospital stay. Therefore, as more beds became available more patients were accommodated. It could happen, of course, that as more beds were built, patients might tend to remain in hospital for longer periods, thereby nullifying the increase in bed capacity. That this has not happened in Canada is evident from Table 8-1 which shows that beds set up in general and allied special hospitals per 1,000 population increased from 5.9 in 1948 to 6.3 in 1960, and from Table 8-4 which indicates that days of care per 1,000 population rose from 1,318 to 1,656 in the same period, and this latter trend continued into 1961.

We may well ask why this upward trend in hospital utilization continues especially when we consider the advances which medicine has made in controlling the ravages of so many diseases and thereby adding to the life expectancy of the average Canadian. It appears, however, that these successes of medicine stimulate the demand for health services or to some extent are the result of it. As the economic barriers to health services are lowered more people use these services with consequent benefits. But at the same time by saving people from the effects of many diseases, and thereby prolonging their lives, we have increased the possibility of a higher prevalence of the long-term chronic conditions of the aged. The same scientific advances which have been so successful in controlling the effects of some diseases and in reducing the length of treatment they require, have increased the time required to treat other diseases more effectively than before.²

If we study the proportion of all general hospital separations, which includes both discharges and deaths, attributable to various causes as outlined in Table 8-5, it appears that in 1961 deliveries and complications of pregnancy plus the mature and immature new-born accounted for nearly one-third, 32.2 per cent of separations, but only 18.5 per cent of total patient-days. On the other hand, chronic diseases which account for a relatively small proportion of separations require a comparatively larger proportion of total hospital-days. Thus, cancer patients represent only 4.6 per cent of separations, but 8.0 per cent of hospital-days. Similarly, patients with diseases of the circulatory system which includes heart disease account for 6.4 per cent of separations but 13.3 per cent of hospital-days.

¹ Quebec did not introduce hospital insurance until 1961.

² The problems associated with the control of hospital utilization are discussed in Chapter 14.

TABLE 8-3 CHRONIC AND CONVALESCENT HOSPITAL BEDS*: ESTIMATED BEDS AVAILABLE AND BEDS PER THOUSAND POPULATION, BY PROVINCES, SELECTED YEARS, 1948-1960

Province	Dec. 31, 1948**		Dec. 31, 1953†		Dec. 31, 1958††		Dec. 31, 1959 ^a		Dec. 31, 1960 ^a	
	Total	Per Thousand Population	Total	Per Thousand Population	Total	Per Thousand Population	Total	Per Thousand Population	Total	Per Thousand Population
Newfoundland.....	147 ^b	0.4	128	0.3	99	0.2	189	0.4	104	0.2
Prince Edward Island.....	0	0	0	0	49	0.1	24	0.2	27	0.3
Nova Scotia.....	26	0.1	81	0.1	46	0.1	88	0.1	88	0.1
New Brunswick.....	26	0.1	89	0.2	135	0.2	56	0.1	91	0.2
Quebec.....	2,627	0.7	3,491 ^c	0.8	5,310	1.1	4,271 ^d	0.9	4,728 ^d	0.9
Ontario.....	2,090	0.5	3,566 ^e	0.8	5,468	0.9	5,756	1.0	5,803	0.9
Manitoba.....	520 ^e	0.7	678	0.8	364	0.4	385	0.4	648	0.7
Saskatchewan.....	79	0.1	136	0.2	550	0.6	541	0.6	558	0.6
Alberta.....	160	0.2	172	0.2	687	0.6	879	0.7	849	0.7
British Columbia.....	1,039 ^f	1.0	1,718 ^g	1.4	2,295	1.5	492 ^h	0.3	324	0.2
CANADA ¹	6,714	0.5	10,059	0.7	15,003	0.9	12,681	0.7	13,220	0.7

*Includes non-federal public and private hospital beds exclusive of tuberculosis units and institutions which provide custodial and/or domiciliary care only.

**Based on provincial health survey reports, except where otherwise indicated.

†Adapted from Dominion Bureau of Statistics *Hospital Statistics, 1953*, Vol. I, Ottawa: Queen's Printer, 1955.

††Adapted from Dominion Bureau of Statistics *Hospital Statistics, 1958*, Vol. I, Ottawa: Queen's Printer, 1960. Estimates for non-reporting private hospitals based on the assumption that their proportion of chronic-convalescent hospitals is approximately the same as in the reporting group. Average size of private non-reporting hospital was used.

^aIncludes budget review and contract hospitals, using list of such hospitals at time of entry into hospital insurance programme for provinces not participating during one or both years in question, with data compiled by Research and Statistics Division from Annual Returns of Hospitals.

^bBased on Dominion Bureau of Statistics *List of Hospitals, 1949*, Ottawa: Queen's Printer, 1952.

^cBased on Dominion Bureau of Statistics *Hospital Statistics, 1953*, Vol. I, Ottawa: Queen's Printer, 1955, including assumption that one-third of private hospital beds are chronic-convalescent.

^dLimited to data reported by 190 out of 255 hospitals in 1959 and 219 out of 255 hospitals in 1960.

^eBased on Manitoba health survey report, plus inclusion of 430 beds in St. Boniface Provincial Infirmary.

^fBased on British Columbia health survey report, plus inclusion of 329 beds in Provincial Infirmary.

^gBased on Dominion Bureau of Statistics, *Hospital Statistics, 1953*, Vol. I, Ottawa: Queen's Printer, 1955, including assumption that four-fifths of private hospital beds are chronic-convalescent.

^hRepresents five public hospitals not covered by the hospital insurance programme but which reported to the Dominion Bureau of Statistics in previous years.

¹Excluding the Yukon and Northwest Territories.

Source: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962 (unpublished report).

TABLE 8-4 ADMISSION*, ADMISSION PER 1,000 POPULATION*, AVERAGE LENGTH OF STAY, DAYS OF CARE PER 1,000 POPULATION, SELECTED YEARS, 1948-1961

Province	1948					1950					1952				
	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population	Admissions	Admissions per 1,000 Population	Average Length of Stay
Newfoundland	11,947	128	10.4	1,370	11,002	115	11.0	1,205	12,648	126	10.5	1,317	12,648	126	10.5
Prince Edward Island	64,570	103	10.0	1,093	69,832	109	9.8	1,106	78,440	120	10.3	1,233	78,440	120	10.3
Nova Scotia	60,478	121	9.9	1,259	66,821	131	9.0	1,234	67,765	129	9.0	1,190	67,765	129	9.0
New Brunswick	288,521	75	11.5	1,122	329,351	83	11.1	1,270	387,062	93	11.2	1,351	387,062	93	11.2
Quebec	465,172	109	9.8	1,282	510,034	114	10.0	1,362	592,383	124	9.8	1,417	592,383	124	9.8
Ontario	93,914	126	9.4	1,425	101,769	133	8.8	1,394	115,666	145	8.5	1,517	115,666	145	8.5
Manitoba	143,919	172	10.2	1,820	166,661	200	10.0	2,163	172,088	204	10.3	2,115	172,088	204	10.3
Saskatchewan	144,095	169	9.2	1,632	157,676	173	8.6	1,516	182,179	187	8.9	1,660	182,179	187	8.9
Alberta	157,029	145	9.9	1,548	173,047	152	10.2	1,682	197,657	164	10.8	1,774	197,657	164	10.8
Yukon and Northwest Territories	3,008	125	15.8	3,314	2,054	86	10.1	3,896	1,553	62	77.8	5,414	1,553	62	77.8
CANADA	1,427,653	111	10.0	1,318	1,588,247	119	9.9	1,411	1,807,411	128	10.0	1,481	1,807,411	128	10.0
1954															
Newfoundland	32,144	81	13.4	1,245	37,628	91	13.9	1,259	41,136	97	12.5	1,226	41,136	97	12.5
Prince Edward Island	13,554	134	9.6	1,330	14,226	144	9.5	1,438	14,124	143	10.1	1,498	14,124	143	10.1
Nova Scotia	83,886	125	9.6	1,198	91,508	132	9.4	1,228	94,710	135	9.5	1,265	94,710	135	9.5
New Brunswick	76,261	141	8.3	1,231	80,611	145	8.3	1,289	83,350	148	8.1	1,292	83,350	148	8.1
Quebec	417,033	95	11.0	1,406	501,601	108	11.0	1,438	518,403	109	10.7	1,463	518,403	109	10.7
Ontario	683,102	134	9.9	1,504	754,861	140	9.8	1,569	790,980	140	9.8	1,576	790,980	140	9.8
Manitoba	116,961	142	8.4	1,524	124,491	146	8.6	1,404	134,301	156	8.3	1,447	134,301	156	8.3
Saskatchewan	176,322	202	10.1	2,010	180,793	205	10.4	2,120	189,496	215	10.0	2,322	189,496	215	10.0
Alberta	201,560	191	8.8	1,803	227,604	203	8.7	1,914	227,292	195	8.5	1,838	227,292	195	8.5
Yukon and Northwest Territories	207,620	160	10.6	1,801	228,354	163	10.0	1,773	229,561	155	9.9	1,673	229,561	155	9.9
CANADA	1,989	74	137.0	8,088	4,331	140	—	4,850	6,150	198	—	4,602	6,150	198	—
	2,010,432	132	10.1	1,533	2,246,008	140	10.0	1,568	2,329,503	140	9.8	1,577	2,329,503	140	9.8

TABLE 8-4 ADMISSION*, ADMISSION PER 1,000 POPULATION, AVERAGE LENGTH OF STAY, DAYS OF CARE PER 1,000 POPULATION, SELECTED YEARS, 1948-1961 (*Concluded*)

Province	1958				1959			
	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population
Newfoundland	43,453	101	11.9	1,279	44,781	102	11.4	1,276
Prince Edward Island	14,845	148	10.0	1,554	15,086	149	9.8	1,586
Nova Scotia	95,391	135	9.3	1,242	102,623	143	9.4	1,394
New Brunswick	84,857	149	7.8	1,274	90,745	156	8.4	1,441
Quebec	553,143	113	10.8	1,457	576,975	115	10.4	1,489
Ontario	815,746	140	9.7	1,566	835,745	140	9.9	1,622
Manitoba	143,469	164	8.6	1,574	147,815	166	8.9	1,630
Saskatchewan	188,778	212	9.9	2,308	190,096	210	9.9	2,277
Alberta	239,416	199	8.5	1,887	246,182	197	9.1	1,992
British Columbia	237,149	154	9.8	1,640	246,289	157	9.7	1,630
Yukon and Northwest Territories	6,170	187		4,301	4,108	121		3,390
CANADA	2,422,417	142	9.8	1,578	2,500,445	143	9.8	1,624
Province	1960				1961†			
	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population	Admissions	Admissions per 1,000 Population	Average Length of Stay	Days of Care per 1,000 Population
Newfoundland	46,933	105	11.1	1,284	49,905	109	11.1	1,262
Prince Edward Island	16,010	155	9.1	1,562	16,217	155	9.9	1,599
Nova Scotia	105,746	145	9.6	1,421	105,392	143	9.8	1,429
New Brunswick	99,255	169	9.6	1,658	100,453	168	9.4	1,675
Quebec	584,971	114	10.0	1,491	667,920	127	10.4	1,536
Ontario	869,091	142	10.2	1,677	897,997	144	10.4	1,717
Manitoba	152,244	168	8.8	1,719	153,000	166	9.0	1,767
Saskatchewan	195,460	214	9.8	2,281	196,138	212	9.7	2,249
Alberta	252,792	196	9.0	1,971	253,069	190	9.0	1,922
British Columbia	261,300	163	9.8	1,647	272,057	167	9.7	1,661
Yukon and Northwest Territories	5,197	144		3,028				1,059
CANADA	2,588,999	145	9.9	1,656	2,717,499	149	10.0	1,678

*Excludes new-born admissions and all admissions to federal hospitals. From 1948 to 1958 includes public hospitals with data adapted from Dominion Bureau of Statistics, *Annual Reports of Hospitals, 1948 to 1952*, and *Hospital Statistics 1954 to 1958*, Vol. I. From 1959 to 1960 includes budget review hospitals (plus contract hospitals in the case of Newfoundland, Northwest Territories and Yukon) using list of such hospitals at time of entry into hospital insurance programme for provinces and territories not participating during one or both years in question. In the case of British Columbia, includes five public hospitals (1959) not covered by hospital insurance programme, but which reported to Dominion Bureau of Statistics the previous years. Based on data compiled by Research and Statistics Division from annual returns of hospitals from 1952 to 1960, includes some adjustments for estimated admission to non-reporting hospitals based on the ratio of admissions to beds in reporting hospitals in each province.

†Admissions are estimated.

Source: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962 (unpublished report).

TABLE 8-5 PERCENTAGE DISTRIBUTION OF SEPARATIONS AND PATIENT-DAYS IN GENERAL HOSPITALS BY SELECTED DIAGNOSTIC GROUPS, (EIGHT PROVINCES),* 1960

	Diagnostic Group	Separations	Patient-Days
	TOTAL.....	100.0	100.0
I.	Infective and Parasitic Diseases.....	1.2	1.7
II.	Neoplasms.....	4.6	8.0
III.	Allergic, Endocrine System, Metabolic and Nutritional Diseases.....	2.2	3.2
IV.	Diseases of the Blood and Blood-forming Organs.....	0.4	0.6
V.	Mental, Psychoneurotic, and Personality Disorders....	1.5	2.3
VI.	Diseases of the Nervous System.....	3.8	8.8
VII.	Diseases of the Circulatory System.....	6.4	13.3
VIII.	Diseases of the Respiratory System.....	14.1	8.6
IX.	Diseases of the Digestive System.....	10.9	10.1
X.	Diseases of the Genito-Urinary System.....	7.0	6.1
XI.	Deliveries and Complications of Maternity.....	18.6	10.1
XII.	Diseases of the Skin and Cellular Tissue.....	2.0	1.6
XIII.	Diseases of the Bones and Organs of Movement.....	2.3	5.1
XIV.	Congenital Malformations.....	0.8	1.2
XV.	Certain Diseases of Early Infancy.....	0.4	0.5
XVI.	Symptoms, Senility and Ill-defined Conditions.....	1.9	1.6
XVII.	Accidents, Poisoning, and Violence.....	7.6	8.1
	Supplementary Classification for Special Admissions, Livebirths and Stillbirths.....	13.9	9.1
	(New-born, mature and immature).....	(13.6)	(8.4)

* Excludes Quebec, Alberta, Yukon, Northwest Territories.

SOURCE: Data supplied by Dominion Bureau of Statistics.

The importance of confinement for childbirth, and births as a leading cause of hospital admissions is the result of a high birth rate and of the large increase in the percentage of births occurring in hospital. In Canada in 1931 this percentage stood at 26.8; in 1960 it was 94.6. In the latter year in three provinces, Prince Edward Island, Ontario, and Saskatchewan, it was of the order of 99.0 per cent. In only one province, Quebec, and in the Yukon and the Northwest Territories was the percentage below the national figure, 85.2 per cent, 93.3 per cent, and 51.7 per cent respectively.¹

The pattern of the utilization of facilities is significantly affected by their quantity and type. Thus, if we examine rated bed capacity, apparently

¹ Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 96.

there is a limit to the amount of care which this given number of beds can provide, the limit being set by the extent to which extra beds in excess of the rated capacity may be set up. According to the Department of National Health and Welfare, in 1948 when bed shortages in the early post-war years were undoubtedly restricting utilization in some provinces, average percentage occupancy in relation to rated capacity was 86 per cent. In succeeding years, extensive new construction increased rated bed capacity at a considerably faster rate than beds set up. Total days of care increased at a slower rate than rated bed capacity and the average percentage occupancy of hospitals, expressed in terms of rated bed capacity, declined to a low of 80.9 per cent in 1958. As the pressure of increased demand for hospital care under provincial hospital insurance plans made itself felt in 1959 and 1960, percentage occupancy went up to 82 per cent in 1960. While the provision of hospital beds exhibits regional variations, available beds in most instances are fully utilized within the limits set by administrative rulings on occupancy rates. Whether all the patients occupying beds are admissible on grounds of clinical need is another matter. Seemingly, if cases were analysed on the grounds of clinical need alone then there would be numerous instances of patient over-stay and the unnecessary utilization of beds.¹

MENTAL HEALTH FACILITIES

Mental Institutions

By the end of 1960 Canada had 75 separate mental institutions,² and over 40 psychiatric units in general hospitals. The standard bed capacity of these facilities,³ stood at 66,172, an increase of 33,221 since 1932.⁴ This is a rise in bed capacity for 100,000 population from 314 to 370. In 1960 there existed wide variations in this ratio between provinces, from a low of 187 beds in Newfoundland to a high of 419 beds in Alberta.

¹ This problem is discussed further in Chapter 14.

² In order to distinguish between the various types of mental institutions the following definitions should be kept in mind: Mental Hospitals—"Institutions that provide treatment for all types of psychiatric conditions", Psychiatric Hospitals—"Institutions that provide short-term, intensive psychiatric treatment", Hospital for Mentally Defectives—"Institutions that provide care for mentally defective patients, including training schools for mentally defectives", Psychiatric Unit—"Units within hospitals that are organized for the treatment of patients with psychiatric disorders". Dominion Bureau of Statistics, *Mental Health Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 9, also Richman, A., *Psychiatric Care in Canada: Extent and Results*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

³ Representing the maximum number of patients which can be accommodated according to minimum space requirements for patients receiving different types of care.

⁴ Dominion Bureau of Statistics, *Mental Health Statistics 1960*, *op. cit.*, p. 43.

The type of accommodation for in-patients in mental institutions shows wide variation among the provinces. While in some provinces the only facilities are public mental hospitals, there is in others a variety of facilities ranging from psychiatric hospitals and psychiatric units in general hospitals to institutions providing care for patients with mental deficiency, psychoses of the senium and disturbed children. According to Richman,

"The amount of accommodation provided is not necessarily related to the frequency of occurrence of illness, frequency of admission or the duration of hospital care. Neither is bed capacity an index of the accommodation available for the admission of patients, since over-crowding varies and the institutions contain patients of various lengths of stay and therefore different potentials for discharge. Although the ratio of public mental hospital accommodation to population may be similar in different provinces, mental hospitals in one province may contain a higher proportion of patients of longer duration of stay, and therefore a lower ratio of accommodation for new admissions."¹

TABLE 8-6 MENTAL INSTITUTIONS, REPORTED BED CAPACITY 1932, TOTAL BED CAPACITY 1960, CANADA AND PROVINCES

Province	1932			1960		
	Reported bed Capacity	Popula- tion	Ratio per 100,000	Total bed Capacity	Popula- tion	Ratio per 100,000*
		'000			'000	
CANADA.....	32,951	10,510	314	66,172	17,870	370
Newfoundland.....	—	—	—	838	448	187
Prince Edward Island.....	300	89	337	377	103	366
Nova Scotia.....	1,951	519	376	2,719	727	374
New Brunswick.....	900	414	217	1,394	589	237
Quebec.....	8,875	2,925	303	20,766	5,142	404
Ontario.....	11,666	3,473	336	21,679	6,111	355
Manitoba.....	2,249	705	319	3,562	906	393
Saskatchewan.....	2,450	924	265	3,191	915	349
Alberta.....	1,875	740	253	5,408	1,291	419
British Columbia.....	2,685	707	380	6,238	1,602	389

* Based on revised population estimates of the Census Division, Dominion Bureau of Statistics. Accordingly the "Ratio per 100,000" for 1960 does not correspond to the figures quoted by Dominion Bureau of Statistics, *Mental Health Statistics 1960*, p. 42.

SOURCE: Dominion Bureau of Statistics, *Mental Health Statistics 1960*, Ottawa: Queen's Printer, 1962, pp. 42 and 43.

¹ Richman, A., *Psychiatric Care in Canada: Extent and Results*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

OVERCROWDING

The bed occupancy rate of mental institutions is a measure of the extent of overcrowding, but although overcrowding may place a strain on quality, it is not necessarily a full indication of the quality of care. The rate is determined by the ratio of the average number of hospitalized patients to the bed capacity. A ratio of 110 per cent, for example, indicates that on the average 110 patients occupy facilities which, according to prescribed standards, should accommodate 100 patients or less.

In Canada our mental institutions have been overcrowded for a number of years, although between 1949 and 1960 some improvement is evident with the occupancy ratio for all mental institutions falling from 120 per cent to 106 per cent.¹ The highest degree of overcrowding is evident in public mental institutions. The reduction in overcrowding between 1948 and 1960 varies between provinces, but by 1960 a total of 5,561 beds would have been required to eliminate overcrowding in public mental hospitals.

TABLE 8-7 PERCENTAGE OCCUPANCY OF PUBLIC MENTAL HOSPITALS, AND ALL INSTITUTIONS, CANADA AND PROVINCES, 1960

Province	Public Mental Hospital	All Institutions
CANADA.....	110	106
Newfoundland.....	109	109
Prince Edward Island.....	79	79
Nova Scotia.....	89	88
New Brunswick.....	140	136
Quebec.....	101	100
Ontario.....	115	112
Manitoba.....	120	111
Saskatchewan.....	156	136
Alberta.....	97	92
British Columbia.....	115	102

SOURCE: Dominion Bureau of Statistics, *Mental Health Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 36.

The rise in bed capacity, which has resulted in some reduction in overcrowding, is due mainly to the enlargement of existing facilities rather than the construction of new facilities.

"There has been a flurry of proposals recently to adopt new policies involving construction of 'small' mental hospitals of 400 to 500 beds in close proximity to medical centres or general hospitals. So far very little

¹ Dominion Bureau of Statistics, *Mental Health Statistics 1960*, *op. cit.*, p. 31.

change is apparent. Practically all assistance given under the federal Hospital Construction Grant toward the expansion of all-purpose mental hospital facilities from 1948 to 1962, has been for new large hospitals, or for additions to the already large existing hospitals. Up to 1962, four new all-purpose mental hospitals with an aggregate of 3,716 beds, had been fully completed with grant assistance, as well as 20 hospital additions totalling 6,860 beds."¹

The use of a bed-population ratio is now considered inadequate as a guide to the need for accommodation for mental patients. One authority claims that:

"In the past, health authorities have attempted to estimate facility needs on a formula basis. Previously used indices of need such as ratios of mental hospital beds to population served are no longer believed to be realistic because of the constant changes brought about by such factors as new developments in treatment methods, the increased numbers of the aged, and improved social and economic status of the population. These factors complicate the planning process, making it unfeasible to plan by merely applying a mechanical ratio of beds per thousand population."²

In 1945 the Dominion-Provincial Conference on Reconstruction suggested a ratio of 5.25 beds per 1,000 population. In 1960 the Department of National Health and Welfare gave a lower estimate, tentatively, "five mental hospital beds per thousand population".³ By 1962, however, the Department indicated that most of the existing mental hospitals could be considered obsolete. In this respect a desirable ratio of between 3.65 and 5 beds per 1,000 population was quoted.

"Many of Canada's mental hospitals were constructed about the turn of the century and, although they have been added to over the years, many of the original buildings are still in operation. Advances in psychiatric treatment have accentuated the inadequacy of these buildings. Many of them are not of fire-resistant construction, and it is estimated that most could be considered obsolete.

"Current opinion is that the need is for additional personnel and for facilities such as day care and night care centres, rather than additional mental hospital beds, other than the replacement of obsolete accommodation. The trend is now away from large mental institutions, often remote from other medical facilities, and toward the development of smaller units so located that supplementary medical services are easily within reach and that the patients are not too far removed from their home communities. "World Health Organization P.H. Paper No. 1, 1959, estimated that at least 3.65 beds per 1,000 population are required to care for this

¹ Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa: The Department, 1962 (unpublished report), Chapter III. The three new all-purpose hospitals are as follows: Ontario Hospital, Port Arthur, Ontario Hospital, North Bay and Hôpital Sainte-Elizabeth, Roberval, Quebec.

² U.S. Department of Health, Education, and Welfare, Public Health Service, *Planning of Facilities for Mental Health*, Washington: U.S. Government Printing Office, 1961, p. 30.

³ Department of National Health and Welfare, *Hospital Care in Canada*, op. cit., Chapter III.

type of patient. However, care should be exercised in applying this figure to Canada because many beds are now in use that could be condemned as obsolete. Others have recommended as high as 5 beds per 1,000 for mental patients and that cottage plans and home care facilities should be fully used."¹

Utilization and Organization of Facilities

Between 1948 and 1960 there was an increase in the number of first admissions to the various types of mental health facilities. An increasing proportion of all admissions was made up of readmissions; patients who had been discharged and subsequently readmitted one or more times. During this period the number of resident patients in public mental hospitals increased about 4 per cent, but the number of patients in hospitals for mentally defectives increased by 120 per cent. The utilization experience of psychiatric in-patient facilities is presented in Table 8-8.

The table shows rates only and thus does not reflect the increased demand due to the increased population. The total number of patient-days per 1,000 population was on about the same level in 1960 as it has been in 1948. But these days in institutions served a greater number of patients. The rates of both first and readmissions increased, the latter at a faster rate, but the mean length of stay declined. The mean length of stay, it should be noted, is a measure not sensitive to recent changes as current separations will reflect largely earlier treatment patterns. Nevertheless, the trend towards a reduction in the direction of institutional care is indicated.

In the past the provision of mental hospitals has followed a pattern similar to that of the now vanishing tuberculosis sanatoria, i.e., one of isolation from the residential community which has often strained the contact between a patient and his relatives and friends and contributed towards difficulties of staffing. Furthermore, mental institutions have too often reflected the "storage bin" philosophy with which modern society has treated its old, its insane and its unbalanced. Only in the last decade has there been real interest in applying the findings of the psychoanalysts and psychiatrists to mental therapy and the related concern of institutional planning. Advances in drug therapy have enabled the mentally disturbed to be kept within the community and this has been incorporated into the planning of treatment facilities. Far more is now known about the distinctions between various mental illnesses and the various therapies and environmental factors to which each is responsive. It is generally held that even in the case of the chronic mentally ill, isolation from the normal community can only be

¹ Department of National Health and Welfare, *National Health Grants 1948-1961*, Ottawa: Queen's Printer, 1962, pp. 40-41.

TABLE 8-8 PUBLIC PSYCHIATRIC IN-PATIENT FACILITIES, CANADA, 1948 AND 1960
GENERAL CHARACTERISTICS

Item	All Mental Institutions		Mental Hospitals		Hospitals for Mentally Defectives		Psychiatric Hospitals		Psychiatric Divisions of General Hospitals	
	1948	1960	1948	1960	1948	1960	1948	1960	1948	1960
Average Daily Number of Patients.....	51,050	69,022	46,904	55,372	3,796	11,392	350	897	—	1,361
Days of Care During Year per 1,000 Population.....	1,457	1,412	1,339	1,134	108	233	10	18	—	27
Admissions (First and Readmissions) per 100,000 Population.....	111	271	87	123	3	7	21	48	—	93
First Admissions per 100,000 Population.....	83	171	65	75	3	7	15	28	—	61
Readmissions per 100 First Admissions.....	33	59	33	63	5	9	37	74	—	53
Discharges per 100 Patients Under Care During Year*	15	34	12	21	3	4	79	90	—	92
Mean Length of Stay of Discharges (months).....	8.6†	6.3	10.6**	10.6	40.4**	40.5	1.2**	1.4	0.7**	0.7

*Patients Under Care means the sum of patients on books at December 31, and discharges and deaths during the year.

**Data provided are for the year 1955.

†Data provided are for the year 1954.

Source: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962, (unpublished report). Dominion Bureau of Statistics, *Mental Health Statistics*, 1955, Ottawa: Queen's Printer, 1957. Dominion Bureau of Statistics, *Mental Health Statistics 1960*, Ottawa: Queen's Printer, 1962. Dominion Bureau of Statistics, *Mental Health Statistics*, 1954, Ottawa: Queen's Printer, 1955.

an obstacle to recovery. Consequently there has been an increased emphasis on attaching facilities for psychiatric treatment to general hospitals in an attempt to provide more effective therapy, and recognizing that there should be no distinction in our approach to the treatment of physical and mental illness. In general hospitals of 100 or more beds there was an increase in psychiatric beds from 318 to 1,331 between 1951 and 1959.¹

There are, however, opposing views on the effectiveness of psychiatric units in general hospitals. The proponents of this type of care claim for it a number of benefits: it does not result in the stigma which is associated with admission to mental hospitals, the patient is not isolated from the community to which he is expected to return, the relative ease with which family and friends can visit the patient, and the integration of psychiatric services with other medical services. Much of the evidence presented to us in the course of the hearings supports this view.²

Typical of the views of the opponents of psychiatric care in general hospitals is the following:

"The psychiatric divisions...more often are still being used as mere clearing houses and possibly increasing disability by retarding treatment. Others are forced to conform to a pattern of bed care found on other wards. Undue stress may be laid on the need for clear-cut-diagnosis and somatic therapy. There is a danger that the general hospital may treat a large proportion of psychiatric patients capable of early recovery, and send on to the mental hospital only those with bad prognosis, lowering the mental hospital's status and ability to function as a therapeutic community."³

In Britain there is a great deal of interest in the administrative problems of psychiatric units. Both the proponents and opponents of this type of care agree that psychiatric units will not work unless the general hospital supplies adequate day space, occupational and recreational therapy space, and creates a proper therapeutic milieu.⁴

A further development in psychiatric facilities is the "small" mental hospital of about 300 beds. At present there are very few such institutions

¹ Dominion Bureau of Statistics, *Hospital Statistics 1959*, Vol. I, Table 20, Ottawa: Queen's Printer, 1961, p. 62.

² See for example briefs submitted to the Royal Commission on Health Services by: The Canadian Psychiatric Association, Toronto, May 1962, Appendix 5. The Canadian Medical Association, Toronto, May 1962, p. 15. The Government of Manitoba, Winnipeg, January 1962, p. 12. The Canadian Welfare Council, Toronto, May 1962, p. 67. Canadian Hospital Association, Toronto, May 1962, pp. 86 and 87.

³ American Public Health Association, *Mental Disorders: A Guide to Control Methods*, New York: The Association, 1962, p. 11.

⁴ McKerracher, D. G., *Trends in Psychiatric Care*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

in this country. Concerning this type of facility the World Health Organization had this to say:

"Recent studies have suggested that from a point of view of financial economy the optimum capacity for hospitals probably lies between 250 and 400 beds. Smaller establishments are expensive because of their lower average percentage of occupants and the difficulty of amortizing technical equipment which is not in full use. Above 400 beds, the cost per bed begins to increase slowly and reaches rather high figures above 800 beds. The reason is probably uncontrollable wastage, lack of responsibility on the part of too large a staff, unnecessary buying, and an industrial type of mechanization which is inevitable in very large hospitals; one must add to these the impossibility of sustained personal contact between the director and hundreds of hospital workers."¹

The World Health Organization recommends that these institutions should have a relatively short-life span. Industrial buildings, schools and certain other types of buildings are built on the basis of the prevailing technology, and are demolished when technology advances and their efficiency is thereby impaired. An alternative to erecting buildings which become obsolete is to plan buildings which can have alternative uses so that when their initial use is outmoded, they can be used for something else.

With the increasing number of aged persons in the population, there has been a rise in the proportion of aged and senile admissions to our mental institutions. In these spatially and professionally isolated long-term mental hospitals, chronic mental patients stand little chance of being returned to the care of the family, or a special community facility. The latter would be possible only if there existed adequate local community or regional services to treat the patient. Some patients, those suffering from severe psychiatric disability, require long-term psychiatric and other medical care, while others with less severe psychiatric conditions need less intensive care which may be given in the home or a non-institutional community health facility.²

Much of the recent expansion in accommodation for mental disorder has been due to the increase in facilities for the mentally retarded. In Canada today there are eleven hospitals for the mentally retarded which care for 10,751 patients. In those provinces which do not have these facilities, Newfoundland, Prince Edward Island, and New Brunswick, the mentally

¹ World Health Organization, *The Community Mental Hospital*, Third Report of the Expert Committee on Mental Health, Technical Report Series, No. 73, Geneva: The Organization, 1953, p. 29. As quoted by McKerracher, *op. cit.*

² See, for example, briefs submitted to the Royal Commission on Health Services by: Canadian Hospital Association, Toronto, May 1962, p. 23; The Canadian Medical Association, Toronto, May 1962, pp. 4 and 50; The Canadian Welfare Council, Toronto, May 1962, pp. 48-52; The Government of Manitoba, Winnipeg, January 1962, p. 9; Victorian Order of Nurses, Toronto, May 1962, pp. 15-24.

retarded are cared for in provincial mental hospitals.¹ The total number of mentally retarded individuals in Canada is estimated to be between 200,000 and 300,000 consisting of the three following groups:

- “(1) a high-grade group which includes 85 percent of the total; these persons can be self-supporting if given special education and training and some assistance in finding suitable employment;
- (2) the second group comprises about twelve percent of the total; they can never be totally self-supporting but given suitable training and supervision in the community should, for the most part, remain out of institutions, contributing something towards their own support;
- (3) the third and lowest grade is wholly dependent and will require moderately skilled nursing care throughout life”.²

Since the first group can be made self-supporting, the practice of segregating large numbers of them in institutions will need a critical review. An attempt to integrate as many as possible of these patients into the regular school programme rather than segregate them as is now the case, would seem to be a more effective means of treatment. After school age, this group in order to become self-supporting, would require job placement and supervision.

The second group can never be self-supporting, but the patients could be cared for in the home, provided visiting nurses and counsellors for the parents are available. The sheltered workshop is possibly the only work situation in which individuals in this group can function.

For those in the third group there is no possibility of becoming self-supporting. These individuals place a particularly heavy financial, physical and psychological strain on the family, especially the mother. Nevertheless, with help from the visiting nurse and counsellor, home care may be possible for some for part of their lives. When this proves inadequate, institutional care is the only recourse.

The problem of the early recognition of the mildly mentally retarded children is difficult under our present system. When the child fails in school, or shows some abnormal behaviour characteristics, treatment and care should begin. Unless those closest to the child, parents and teachers, are cognizant of the first signs of mental retardation, early recognition and care are delayed. The vital importance of early recognition of mental retardation is illustrated by the problem of phenylketonuria which is diagnosed when phenylpyruvic acid is found in the urine of infants. “If the infants were

¹ McKerracher, D. G., *op. cit.*, Part III.

² *Ibid.* Another classification is that used by the Canadian Association for Retarded Children, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, pp. 7 and 8. (See introduction to Recommendations 7-12.)

diagnosed at 3 to 5 weeks of age and placed on proper dietary therapy it is likely the retardation could be prevented or at least minimized."¹

A key figure in the diagnosis and treatment of the full range of psychiatric disorders is the family physician. He may be the general practitioner or internist, paediatrician, and to a lesser extent some other specialist. According to McKerracher:

"A . . . about 25 per cent of all patients consulting their family doctor do so because of disorders caused by anxiety or depression, and these physicians also see many patients with organic confusion. Of necessity, the family physicians refer very few of these problems to specialists—probably not more than five per cent at the most. The factors influencing referral are complex and varied; they include severity of illness, the nature of the training of the family physician, the availability of consultants and also financial and social circumstances. In dealing with the social and psychological problems of their patients, Canadian family physicians now receive little help from social agencies and from public health nurses.

"B The family doctor always has treated and always will treat most of those who come to him with psychiatric problems. Even if it were desirable, it would never be possible to provide cradle-to-grave psychiatry through an organization of specialists. Unfortunately, the family physician usually lacks training in psychiatry, yet receives little help from psychiatric consultants and from the community social services. Usually he can't get a psychiatrist quickly and when he does secure one, often he is not very helpful. Moreover, when any of his psychiatric patients need hospitalization, the general practitioner is faced with the distasteful necessity of referring the patient to a provincial hospital."²

Despite the importance of the family physician in the diagnosis and treatment of psychiatric conditions, it is not often that his present and potential contribution is recognized, but this is due, in part, to his inadequate training in psychiatry.³

Another important service for the diagnosis and treatment of psychiatric conditions is provided by psychiatric clinics and out-patient departments. Although the data on facilities published by the Dominion Bureau of Statistics are incomplete,⁴ this is the only source available to which we can turn for information.⁵ The total number of new patients seen in 1960 was 34,104, and assuming each of these was seen by a physician, "the average full time physician saw 214 new patients per year, and the ratio of total interviews to new patients was 4.0:1".⁶ In view of the lack

¹ *The Nova Scotia Division of the Canadian Association for Retarded Children*, brief submitted to the Royal Commission on Health Services, Halifax, October 1961, p. 12.

² McKerracher, D. G., *op. cit.*, Part III.

³ *Ibid.*, see also MacFarlane, J. A., *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

⁴ Richman, A., *op. cit.*, Chapter II.

⁵ This is another instance where improvement in data collection would strengthen greatly our ability to formulate judgment based on facts rather than on inadequate knowledge.

⁶ Richman, A., *op. cit.*, Chapter II.

of studies aimed at objectively evaluating the services provided in the clinics and out-patient departments, it is impossible to state the degree of their effectiveness as one of the community's weapons in combatting psychiatric disorders. Nevertheless the Canadian Mental Health Association is of the opinion that in the future we will see an emphasis on community psychiatric services including those "where a large proportion of psychological disorder can be diagnosed and treated without hospitalization".¹

TUBERCULOSIS FACILITIES

Tuberculosis services share with the services for the mentally ill a long history of development apart from the general health services in the community. This separation found its most recent formal expression in the Hospital Insurance and Diagnostic Services Act of 1957, which specifically excludes both tuberculosis and mental hospitals from the coverage by the Act.

The early concern of provincial governments with the treatment of tuberculosis was the direct result of their role in the control of communicable diseases. There has been no uniform pattern in the development of tuberculosis services in the different provinces. Invariably, the first services were organized and financed by voluntary effort. Then they were gradually financed by governments in whole or in part and were incorporated into the public health services as they developed.² They still remain, however, a combination of voluntary and official effort.

Tuberculosis being a communicable disease, diagnosis and case-finding were given early attention by the voluntary and provincial agencies concerned. The next step in the chain of control measures was the isolation and the treatment of the case. The protection of the community was a strong reason for removing the patient to an institution. It was an important public health objective in the hospitalization of the tuberculous.

Physical separation with the resulting problems of securing medical staff contributed to the isolation of tuberculosis services from the general health services. Because of their location, these institutions required a full-time medical staff which resulted in the development of a discipline of its own with a substantial number of doctors recruited from those who had contracted the disease and after recovery were willing to continue work in this

¹ The Canadian Mental Health Association, *More For The Mind*, Toronto: The Association, 1963, p. 55.

² Wherrett, G. J., *Tuberculosis in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

specialty. This source of supply has happily dried up, however, with increasingly effective protection of the medical practitioners against infection. The recruitment of personnel from outside has also been made more difficult by the isolation of these services as well as the declining prospects for professional practice in the tuberculosis field as such.¹

The public health aspects in the control of tuberculosis have been one factor in the assumption of provincial responsibility. Another has been the fact that, on the one hand, treatment could be enforced by law, but on the other, hospitalization was so long and costly that the affected individual could hardly be expected to bear the resulting expense. Thus, today, sanatorium treatment is provided at government expense in most provinces. Even in those provinces where an individual charge for the care may be made, the amount collected from paying patients is usually a small percentage of the total cost. The work of case-finding continues to be supported largely by voluntary campaigns conducted by the Canadian Tuberculosis Association.²

Hospital Resources

The erstwhile reasons for the separate development of tuberculosis services have been gradually removed during the last two decades or so. Chemotherapy and antibiotics have drastically transformed the course of treatment and decreased the length of stay in sanatoria. The average hospital stay of tuberculosis patients was reduced from 300 days to 264 days between 1958 and 1960, with New Brunswick showing an average stay of only 194 days in 1960.

Table 8-9 shows that an increasing proportion of the disease is treated in tuberculosis units of general hospitals rather than in sanatoria. The percentage of total beds located in these units rose from 6.6 per cent in 1958 to 10 per cent in 1960. The number of these beds has actually increased while the bed capacity in sanatoria has fallen substantially, resulting in a steady decline in the total number of tuberculosis beds. This decline is taking place despite the population increase. Thus, the rated bed capacity per 1,000 population declined from 0.9 beds per 1,000 population in 1958 to 0.7 beds in 1960.³

The rehabilitation of the recovered is being more and more co-ordinated with general rehabilitation programmes. This trend towards integration has also begun in the tuberculosis services provided for the Indian and

¹ *Ibid.*

² Dominion Bureau of Statistics, *Canada Year Book 1962*, Ottawa: Queen's Printer, 1962, p. 235.

³ Department of National Health and Welfare, *Hospital Care in Canada, op. cit.*, Chapter III.

TABLE 8-9 ESTIMATED RATED BED CAPACITY, TUBERCULOSIS SANATORIA AND UNITS (FEDERAL AND NON-FEDERAL), CANADA, 1958-1960

Year	Tuberculosis Sanatoria	Tuberculosis Units	Total
1958.....	14,237	998	15,235
1959.....	13,242	823	14,065
1960.....	11,687	1,292	12,979

SOURCE: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962: (unpublished report), Chapter III.

Eskimo population among whom the largest remaining pockets of tuberculosis still persist. There the co-ordination of tuberculosis services with general health services is progressing simultaneously with the gradual integration of the special services for these population groups with the regular provincial health services.

These developments are the consequence of the greatly reduced incidence of tuberculosis morbidity as indicated in Chapter 5. That the reduction in beds still lags behind the declining demand is indicated by the fact that the occupancy rate in relation to beds set up has declined from its high of 93 per cent in 1953 to 78 per cent in 1960.¹ One of the reasons for this slow rate of converting unused beds to other uses is the location of many of the institutions, their structure, and often also their age, which in some instances renders them unsuitable for other purposes.

The lagging reduction in the number of tuberculosis beds is also reflected in the trend in the number of staff. Total staff has decreased by about 12 per cent from 1958 to 1960.² This corresponds roughly to the decline in the number of beds but, as may be expected from the sharply lowered occupancy rate of the remaining beds, the ratio of personnel per 100 patients has increased by almost 25 per cent between 1958 and 1960.³ According to Table 8-10, there has been little change in the number of physicians and nurses per 100 patients but the number of orderlies, attendants, and nursing assistants, has risen significantly.

¹ Dominion Bureau of Statistics, *Tuberculosis Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 48. It should be noted that the number of beds shown in tuberculosis sanatoria is not an indicator of the number of patients hospitalized with tuberculosis since sanatoria have been used in some provinces to provide accommodation for the chronically ill and the aged mental patient.

² Department of National Health and Welfare, *Hospital Care in Canada*, *op. cit.*, Chapter III.

³ Dominion Bureau of Statistics, *Tuberculosis Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 54.

TABLE 8-10 NUMBER OF SELECTED CATEGORIES OF PERSONNEL PER 100 PATIENTS, IN TUBERCULOSIS SANATORIA, CANADA, 1958-1960

Category	1958	1959	1960
Physicians.....	4.1	4.1	4.1
Full-time.....	2.4	2.5	2.5
Part-time.....	1.7	1.5	1.6
Graduate Nurses.....	11.6	11.5	12.0
Orderlies, Attendants, and Nursing Assistants.....	16.5	18.3	21.2

SOURCE: Department of National Health and Welfare, *Hospital Care in Canada*, Ottawa 1962 (unpublished report).

INTERNATIONAL COMPARISON, HOSPITAL FACILITIES

We have described the expansion of hospital facilities in Canada and have indicated that although the number of beds available has increased substantially, the supply of beds relative to the population has not changed significantly, and with the elimination of many beds in tuberculosis hospitals this ratio has been declining in recent years.

Compared with other nations, however, Canada ranks favourably in terms of population per hospital bed. Table 8-11 shows that in 1959 of the countries listed, Switzerland had the lowest ratio followed by Canada, Australia, New Zealand, and Sweden with population-bed ratios of 90 people per bed. The United States and the United Kingdom had a ratio of 110 people per bed and other countries, such as the Netherlands, had a ratio of 130 to each bed.¹

With only few exceptions, the differences between the ratios in the selected countries fell within a range of 90 to 110 persons per bed. On the other hand, if the ratio is expressed in terms of the number of beds per 1,000 population, the above mentioned range would mean that in these countries there are between 10 and 11 hospital beds of all types per 1,000 population. Thus, in most developed countries the total hospital bed supply in relation to the population does not vary substantially, although there may be greater differences in the proportions of the various types of beds.²

¹ See Table 8-11.

² In 1960, the United Kingdom had 10.3 beds per 1,000 persons of which 5.7 were in acute, geriatric, maternity and other hospitals and 4.6 beds in hospital for the mentally ill and mentally retarded. In that year Canada had 10.7 beds per 1,000 persons of which 3.8 were in hospitals for the mentally ill and the mentally defective and 6.9 in other hospitals including tuberculosis hospitals. See National Health Service, *A Hospital Plan for England and Wales*, London: Her Majesty's Stationery Office, January 1962, pp. 274-275.

TABLE 8-11 INTERNATIONAL COMPARISON,
POPULATION PER HOSPITAL BED,
SELECTED COUNTRIES, 1959

Country	Population per Hospital Bed
Australia.....	90
Austria.....	110
Belgium.....	130*
Canada.....	90
Denmark.....	110
England & Wales.....	110
Finland.....	110
France.....	110
Germany: Federal Republic.....	100
Greece.....	**
Italy.....	110
Luxembourg.....	100
Netherlands.....	130
New Zealand.....	90
Norway.....	110
Portugal.....	190
Spain.....	310
Sweden.....	90
Switzerland.....	80†
United States.....	110

*Data related to 1958.

**Not available.

†Data related to 1956.

SOURCE: Compilation based on World Health Organization, *Annual Epidemiological and Vital Statistics*, Geneva: The Organization, 1962, pp. 654-695, and United Nations *Demographic Yearbook 1960*, New York: The Organization, 1961, pp. 104-115.

HEALTH SERVICES

In Chapter 6 we described briefly the evolution of health services from an early, simple and primitive stage to the technically advanced health services complex of today. The discussion of health personnel in Chapter 7 and of facilities in this chapter illustrates the vast difference between medical practice then and now, and also between the early hospital and the modern institution. But apart from the high degree of diversification of these two types of health resources, our modern communities have a great number of new services and agencies, all attempting to fill some newly developed or

newly recognized need. Among these are the services provided to the general public by local or provincial governments and by voluntary organizations, as well as services made available under a variety of auspices to selected groups of the population such as members of the armed services, veterans, Indians, and employee groups.¹

Also comparatively new is our concern with the provision of more adequate health services in the remote areas of the country which have problems entirely different from those in the more densely settled parts.

We have come to recognize, furthermore, that the sick and disabled require a number of services which are not health services in the sense of applying medical knowledge and techniques, but which are, nevertheless, essential if the patient is to derive the full benefit from the medical services he is using. Among them are the various welfare services, educational and training facilities, placement and employment services, and others which play a part in the rehabilitation of the patient. Also related to the problem of helping those disabled temporarily or permanently by illness are the various existing or still needed income maintenance programmes.²

Government Health Services

We use the term "government health services" instead of the term "public health services", which is still frequently used, because public health has the connotation of environmental and general preventive services as distinct from personal health services. The latter were originally considered to lie outside the sphere of government activity, but today this distinction is difficult to maintain. For instance, immunization, prenatal and postnatal care, well-baby care, to mention some, are personal—though preventive—health services. The same is true of actual treatment service provided by government; for example, the service to the tuberculous, or home nursing carried out by the public health nurse. A preferable term is one which refers both to the auspices under which a service is provided, e.g., government, and to the type of service, e.g., environmental sanitation, and immunization.

The federal Department of National Health and Welfare and the provincial departments of health are organized largely along parallel lines, with the former assuming mainly a consulting function except in the areas of grants (National Health Grants and Hospital Insurance Programmes), and the areas assigned to federal jurisdiction.

Provincial governments have set up separate divisions or sections responsible for the general stimulation and supervision of local health activity,

¹ We have presented here a brief outline of the services available through various government agencies. A more detailed analysis for the organization and provision of these services will appear in Vol. II of this Report.

² See Chapter 1.

the organization of new local health districts, the administration of grants-in-aid, the channelling of information from the specialist divisions to local health officials, and the co-ordination of provincial and local programmes.¹

The organization and administration of the local health units vary considerably. Local requirements in public health services have necessitated a decentralization of public health facilities which has led to a certain degree of local autonomy. The functions and organization of local public health facilities vary considerably among the provinces although basic programmes are similar. Most types of preventive public health service are provided at the local level, and these include sanitation, child, maternal and school health, and communicable disease control.

Local health units are financed by all three levels of government; municipal, provincial and federal. The municipal share is usually distributed among participating municipalities on a population basis. Provincial assistance is provided through percentage grants for approved services in Ontario and Alberta. In Quebec, Manitoba, Saskatchewan and British Columbia local governments are assessed some portion of the cost, while the province pays the balance. Federal assistance for the expansion of local health services has been provided since 1948 through the General Public Health Grant under the National Health Grants Programme.

At the end of 1962, full-time public health services were supplied through 28 urban health departments and 179 local health units. The number of full-time health departments, units and districts had increased to 207 from 157 in 1948. Intermunicipal units were distributed as follows: Nova Scotia 8, Quebec 73, Ontario 35, Manitoba 13, Saskatchewan 10, Alberta 23 and British Columbia 17. Urban health departments were located in these provinces as follows: Nova Scotia 1, Quebec 6, Ontario 13, Manitoba 1, Saskatchewan 2, Alberta 3 and British Columbia 2.²

Some of the most common functions of health departments are briefly described below, but this description is by no means exhaustive. The degree of departmentalization varies with the size of the department and also with its policies.

ENVIRONMENTAL HEALTH MEASURES

These still form a very significant part of government activity. Their continued importance in the prevention of the spread of epidemic disease was discussed in Chapter 5. Some of the traditional functions in this area, such as maintenance of safe water supplies and supervision of sewage disposal systems, are generally well established and accepted as desirable

¹ Canadian Public Health Association, *The Federal and Provincial Health Services in Canada*, Second Edition, Toronto: The University of Toronto Press, 1962.

² Data supplied by the Department of National Health and Welfare.

community responsibilities, carried out by agencies other than health departments. But new and more difficult tasks have arisen such as the control of air pollution, and radiation hazards. Some of these operations require international collaboration plus close co-ordination between the various levels of government in their administration as well as in their laboratory and other scientific services.

The prevention of industrial accidents, occupational diseases and the maintenance of the health of employees are the joint concern of industry and government agencies, including workmen's compensation boards and health departments.

Specialized advisory services on occupational health problems are provided by the Federal Government which undertakes studies such as a continuous review of certain occupational health hazards, e.g., those caused by radiation. Federal industrial radiation protection activities include the reviewing of all applications for licence to procure radio-isotopes for clinical or other use and the regulation of safe design and operation of nuclear reactors. Field studies are undertaken of radiation hazards associated with the industrial and institutional use of X-ray equipment.

COMMUNICABLE DISEASE CONTROL

A major function of government health authorities is the control of communicable disease. This is the function of separate divisions in six provincial health departments and is part of the duties of a medical officer in others. The successes in the field of communicable disease control and the remaining and new challenges have been pointed out in Chapter 5. The traditional immunization programmes and particularly the anti-polio-myelitis campaigns using the Salk and Sabin vaccines are outstanding examples of effective collaboration among all levels of government.

FOOD AND DRUG CONTROL

This is one of the oldest functions of government in the health field; it is one of the most important functions and at the same time one of the most difficult to administer. Together with other environmental control measures it is all too often taken for granted by the public.

The Federal Government protects the public against health hazards in the consumption of food and drugs, fraud, deceptive labelling and misleading advertising, and against abuse of narcotics and other potentially dangerous drugs through administration of the Food and Drugs Act, the Proprietary or Patent Medicine Act, and the Narcotics Control Act.¹

¹ Activities in the field of drugs are dealt with in Chapters 9, 16 and 17.

MATERNAL AND CHILD HEALTH

Programmes of this nature have been greatly stimulated by the still unnecessarily high, though declining, infant mortality rate.¹ Provincial maternal and child health services include supervision of the mother from the beginning of pregnancy into the post partum period, and of the child from the time of birth through the neonatal stage, infancy, early childhood and the school age period. These services are largely decentralized through local health units and departments, but nearly all provinces maintain separate divisions of maternal and child health, or employ consultants to promote better standards and give technical assistance. Public health nurses play a prominent role in providing services. All provinces have special divisions or sections to supervise public health nursing activities. Dental health and rehabilitation services form an integral part of maternal and child health programmes.

Here, as in the following discussion of dental health measures, we find a government operated service which is preventive but largely personal in nature thus supplementing the services provided by private personnel and agencies.

DENTAL HEALTH

Dental health programmes are focussed mainly on children and public welfare recipients and are administered chiefly by local authorities through dental health clinics. Although prevention of dental disease is the primary goal of these programmes, the provision of emergency care for children whose parents are unable to pay remains a primary consideration in some districts. Limited dental care benefits are provided for public assistance recipients in five provinces: British Columbia, Alberta, Saskatchewan, Manitoba and Ontario. The service is carried into remote areas by mobile units. Consultation on fluoridation is frequently found among the functions of dental health divisions of provincial health departments.

HEALTH EDUCATION

This function has received growing recognition as a necessary prerequisite for the success of health measures, particularly preventive ones. While every health worker is expected to carry out some health education, the need for professional full-time health educators has been increasingly recognized. This is evidenced by the fact that most provincial health departments have developed separate divisions or units to co-ordinate educational programmes; Nova Scotia conducts health education activities through various agencies.

¹ See Chapter 5.

NUTRITION

This is an important factor in the maintenance of health; it has resulted in the development of nutrition services in provincial and federal departments. Such services include technical guidance, education, consultation and research, and in some instances, sponsorship of school lunch programmes and distribution of dietary supplements.¹

PUBLIC HEALTH LABORATORIES

These are involved in environmental studies and communicable disease control. The principal types of work performed by laboratories include medical microbiology, serodiagnosis, sanitary bacteriology, clinical pathology and tissue pathology. Studies involve the testing of water, milk and food samples, and investigation of infectious diseases of bacterial, viral, fungal and parasitic origin.

Recent trends in some provinces include efforts to co-ordinate public health and hospital laboratory services, special measures to bring laboratory facilities to rural areas, and devices to reduce the direct cost of clinical laboratory procedures to the individual. Notable among these experiments are the provincially subsidized laboratory and X-ray units in Manitoba, and integration with general hospitals and standardized charges for service achieved in the Atlantic Provinces. The scope of free service has been extended beyond public health tests in many provinces to include histopathological examinations for cancer and a variety of other clinical procedures.

The Federal Government operates separate central laboratories specializing in research in environmental and occupational health, radiation protection, public health engineering, nutrition, bacteriology, biochemicals, biologics control, clinical chemistry, syphilis serology, virus control, and food and drug analysis. Regional food and drug laboratories are also maintained in five major Canadian cities.²

RESEARCH AND STATISTICS

The activities carried out in government departments of health vary with the size and the resources of the department as well as the awareness of their value. A good deal of technical—as opposed to operational—research has always been carried out in connection with the various programmes mentioned above. Of relative recent origin is operational research which attempts to evaluate various phases of the health services; this has come about as the result of the growing complexity and cost of our health services. Studies

¹ Canadian Public Health Association, *The Federal and Provincial Health Services in Canada*, *op. cit.*, and data supplied by the Department of National Health and Welfare.

² Halifax, Montreal, Toronto, Winnipeg and Vancouver.

of this nature as well as epidemiological studies of disease require reliable and comprehensive statistics compiled on a continuing and comparable basis. While certain statistical series such as vital statistics are well established, Canadian health statistics particularly on the national level are still woefully inadequate, a fact which made the task of the Commission more difficult in a number of aspects. This does not mean that we suffer from a numerical lack of data. There is an impressive array of health statistics but these are not always based on clearly discernible criteria except perhaps that data should be produced in increasing quantities.¹ The usefulness of these data is further limited by the time lag in their publication. These are serious shortcomings especially in an era when significant changes are taking place in the health of our citizens, and in the health services complex. Comprehensive, accurate, up-to-date data which reflect these changes are a vital element in the planning required to deal with the task of continuing improvement of the health status of the Canadian people.² We think that the remarks of Titmuss concerning statistics on income distribution in the United Kingdom are equally pertinent to the field of health statistics in Canada.

"To what extent then... are we becoming prisoners of the statistical houses we built in the past to accommodate the social data of that age? The appeal of continuity in the analysis and presentation of large masses of data must always be strong in an historically conscious society and statisticians (like other people) have their own particular reasons for not wishing to change. Their preferences for stability and order are reinforced when those who use the results of their work fail to appraise its relevance to a different social structure and to changes in economic and institutional relationships."³

Voluntary Health Services

Besides the health services provided by governments, the hospitals, the health professions and occupations, there are numerous other agencies concerned with the care of the sick and disabled. These are voluntary health agencies which provide actual personal health services, although some of these agencies are devoted wholly or in part to fund raising and research.⁴ A significant feature of these voluntary services when compared with government services, is their uneven distribution due to their greater dependence on local initiative in their organization and operation.

¹ See, for example, the proliferation of publications such as the following: Dominion Bureau of Statistics, *Hospital Statistics*, Vols. I and II, which in recent years have become *Hospital Statistics*, Vols. I to VI.

² We propose to deal with this subject more specifically in Volume II of this Report.

³ Titmuss, Richard M., *Income Distribution and Social Change*, Toronto: University of Toronto Press, 1962, p. 192.

⁴ We deal further with this subject in Volume II of this Report.

Health organizations considered as voluntary in this context are non-profit organizations under voluntarily organized boards.¹ In most cases it is the stated policy of these organizations that the services provided are only to be financed if they are not supported elsewhere from either public or private funds.

In terms of their objectives as well as the nature of their membership one can distinguish two types of voluntary health organizations: (1) The "citizen-member" organization, established by citizens to provide services to other people and representing the familiar form of voluntary philanthropy; (2) The "patient-member" organization, organized by patients, their relatives or friends to provide services to themselves.²

Many of the organizations are concerned with case-finding and particularly the early detection of disease or disability. They determine services needed and refer to sources of treatment, including the family physician. The clinics may be stationary or travelling, and are in some cases designed to estimate the prevalence of certain conditions and the need for more permanent service.

Voluntary organizations have been instrumental in providing hospital care by contributing to the capital and operating expenditures, as well as by administering certain institutions. After the advent of the hospital insurance programme, some of these organizations have provided supplementary services for in- and out-patients. This applies particularly in the field of tuberculosis and rehabilitation services, as well as the hospitals established and operated by the Red Cross.

In the area of rehabilitation, voluntary effort is as diversified as the rehabilitation services themselves, ranging from in-patient care, out-patient care in hospitals or special centres, to the training and education of the handicapped, as well as the supply of appliances and equipment. But while hospitalization has become almost entirely a public responsibility, home nursing is still carried out largely by voluntary organizations such as the Victorian Order of Nurses. The importance of this service is increasing with the growing attention to organized home care and the prenatal and post-natal care of maternity cases.³

The role of voluntary organizations in the field of psychiatric care and the treatment of the emotionally disturbed is increasing as the emphasis shifts from institutional care to the development of community mental health facilities. Here again, training and education are partly supplied or assisted by voluntary organizations.

¹ Govan, E. S. L., *Voluntary Health Organizations in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter I.

² *Ibid.*

³ Home care programmes are discussed in detail in Chapter 15.

A limited amount of dental care is provided through voluntary effort in outlying areas or to needy children.¹

Transportation to and from treatment centres is paid for by voluntary organizations, and also accommodation for patients who have to wait for diagnosis or treatment at a place remote from their residence without being admitted as in-patients is sometimes provided. The latter applies to handicapped persons attending special schools or classes.

Voluntary effort has succeeded in organizing a vital element in Canada's health services: the blood transfusion service of the Canadian Red Cross. The objective of this service is:

"... to supply every hospital in Canada, free of charge with whole blood, dried plasma, distilled water for its reconstitution and sterile administration sets, the one stipulation being that any hospital wishing to participate would undertake to make no charge whatsoever to patients transfused under the scheme".²

Voluntary effort has resulted also in the organization of eye and tissue banks, and in the preparation and distribution of surgical dressings particularly to cancer patients.

The actual provision of drugs is a service which most organizations consider beyond their means, but patient-member organizations have been formed which, together with existing citizen-member organizations, are active in assisting in the purchase of drugs particularly where costly drugs have to be taken regularly. Voluntary organizations also assist in the supply of prosthetic devices and other equipment to the temporarily or permanently disabled.

The home care of the sick, whether as an organized programme or not, and the rehabilitation of the handicapped require a wide range of ancillary services, a large number of which are provided by voluntary effort. Among these services are homemaking, practical nursing, other social services, and the provision of teaching and training personnel and facilities such as sheltered workshops, a logical extension of the extensive voluntary services to the handicapped during their rehabilitation stage. Their objective is either to serve as a stepping stone to competitive employment, or as a permanent place of work for those unable to compete in the open labour market. Many handicapped are able to perform various types of work, but are unable

¹ Since September 1957, the Junior Red Cross Advisory Committee of the Saskatchewan Division, Canadian Red Cross Society has carried on seven dental clinics for children at Cumberland House and eight at Ile à la Crosse in Northern Saskatchewan. These dental clinics were undertaken as a five-year pilot project, *The Canadian Red Cross Society*, brief submitted to the Royal Commission on Health Services, Toronto, May 1962.

² Stanbury, W. S., *Origin, Development and Future of the Canadian Red Cross Blood Transfusion Service*, Toronto: The Society, 1961, pp. 9 and 10.

to cope with the environment which usually prevails in industry or business; they may be unable to travel to or from work, use the regular machines or other equipment, or they may require longer rest periods or other special arrangements. This is where the sheltered workshop comes in: it provides "a work experience without the stress and tension of competitive employment".¹ Thus, the emphasis is on the provision of a work environment suited to the condition of the handicapped. The type of work itself ranges all the way from routine jobs requiring a minimum of skill and strength to the production of articles "of high artistic quality".² It is estimated that about 3,500 persons are assisted by these workshops.³

What has been said about the need for greater co-ordination among the health services in general applies also to many forms of the voluntary effort in this field. Voluntary organizations, by their very nature, come into being through the initiative of groups and individuals who recognize certain problems and needs in the community. Their primary concern is, therefore, with a particular need. With the growing complexity of our health problems as well as the services aimed at their solution, it is becoming increasingly difficult to isolate specific needs and activities directed towards meeting them.

Voluntary effort, nevertheless, has the great merit of recognizing needs and taking action often long before public services come into operation. The history of government health services abounds with examples of voluntary initiative preceding an active interest by governments. Tuberculosis services and the erection of hospitals are examples. They also illustrate the fact that it is essential for voluntary health agencies to continue to function in areas where governments become involved. In the fields of tuberculosis and hospital construction, which we cited as examples of some of the earliest fields of large scale voluntary services, these services have continued their substantial contributions long after government has assumed a much greater role. The visiting nursing service is another instance where a voluntary effort has been in operation for a long time even though its services are increasingly employed by public agencies. In thus recognizing and emphasizing the contributions of voluntary organizations, one should include not only those providing actual services but also those whose aim is the education of the public or research. Nor should one overlook the contributions made by voluntary effort towards the solution of the problem of financing health services. Often there may be limits to what voluntary enterprise can accomplish, limits which eventually may require public agencies to substantially support a voluntary scheme or completely take over its programme.

¹ Armstrong, K. S., *"The Sheltered Workshop in the Rehabilitation Process"* in *Rehabilitation in Canada*, Department of Labour, Ottawa: Queen's Printer, Summer 1962, p. 5.

² *Marina Creations*, Rehabilitation in Canada, *ibid.*, p. 14.

³ Data supplied by Department of Labour.

But we are convinced that voluntary organizations in the health field will continue to render essential services by:

1. identifying problem areas and drawing attention to them;
2. providing at least some relief expeditiously;
3. developing methods of solving the problems; and
4. participating with government in particular programmes.

It would be difficult to over-estimate the competence of voluntary effort and agencies in the health field. Nevertheless, in a field of action as complex as this one, it is essential that there be increasing co-ordination among voluntary agencies and co-operation with government. We deal with this matter further in Volume II of this Report.

Other Community Services

We wish to emphasize the relationship of health services with other community services. While we cannot concern ourselves in detail with these other services, they are an important element in an integrated system of health services.

These supplementary services include the services provided by welfare departments, social workers, homemakers, and the wide range of services required to establish and maintain the patient or his dependents in the community including the placement of the rehabilitated in fitting employment. Effective co-ordination of such services with a properly planned health care programme is essential if adequate progress is to be achieved in the health field making the most effective use of the nation's *total* resources.

Health Services for Selected Groups

Certain services are established exclusively for use by members of specific population groups, such as the armed services, veterans, Indians, and employee groups, including workmen's compensation cases.

The auspices under which these services are provided vary with the group. So does the range of services provided and the provisions for their use. Our main interest in this context is in services specifically earmarked for a certain group and not generally accessible to other members of the community. With the exception of the armed services, members of these groups may either be treated by a physician employed, or a hospital operated by the particular agency. For certain conditions or in certain areas a person may be referred to the general community services which would then be reimbursed. The health care of Indians particularly is now in a state of transition with the administration gradually moving from the Indian Health Services of the Department of National Health and Welfare to the general health services of the provinces.

Industrial health services provided by government have been noted above, but industry is now concerned with the general health of the members of the labour force. During World War II the objective of maintaining peak production in industry with a reduced labour force focused attention on the importance of a healthy labour force on the home front and of keeping to a minimum absenteeism due to sickness. Health services of some sort also have always been maintained in company towns or similar situations in isolated areas where the local industry provided the existing community health services. Since World War II the concern of industry with the general health of its employees, including the executives, continued to grow although the motives behind this concern changed gradually. In addition to the interest in maintaining high productivity, employers as well as unions began to take into account the growing awareness of health and health services as a desirable goal in our society. This led not only to the growth of group insurance for health services, but also to the establishment by industries of certain health services for their employees. The provision of a wide range of health services is still limited largely to industrial establishments in isolated areas. Most health services provided by industry are designed not to interfere with, but to supplement existing medical and hospital care by providing emergency services and consultation, leaving actual treatment to the private practitioner. Of a different nature but also designed primarily for specific groups of employees and their dependents are the facilities created by labour unions. An outstanding example is the recently organized centre at Sault Ste Marie, Ontario.

Health Services in Remote Areas

The remote areas present a picture essentially different from that we have painted for the rest of the country, and we wish to emphasize this point specifically. By remote areas we mean primarily the northern territories and it is for these areas that most of the existing data are available. But health and social conditions do not change with administrative boundaries, and much of what is said about the Yukon and the Northwest Territories also applies to the northern and outlying parts of the provinces, particularly in Newfoundland.

Most of the criteria established for the adequacy of health services in southern Canada do not apply in the North where the service has to cope with proportionally more sickness and death, a population much more widely scattered over more inaccessible country, generally worse weather, with more limited transportation facilities, and inadequate communication facilities.¹

¹ Northern Health Service, Department of National Health and Welfare, *Health Services Plan, Northwest Territories 1962-67 (Revised)*, Ottawa: The Department, February 1962, p. 5.

The following data illustrate the situation but the figures should be interpreted against the background of climate, transportation and communication difficulties, and social conditions.

TABLE 8-12 HEALTH SERVICES IN THE YUKON AND NORTHWEST TERRITORIES, 1962

Item	Yukon	Northwest Territories	Total
Total area (sq. miles).....	207,076	1,304,903	1,511,979
Population.....	15,000	24,000	39,000
Hospital beds.....	170	576	746
of these, in nursing stations.....	8	67	75
Physicians.....	12	19	31
Dentists.....	5	5	10
Registered Nurses.....	52	90	142
Paramedical Personnel.....	30	78	108

SOURCE: Northern Health Service, Department of National Health and Welfare, *Health in Canada's North*, brief submitted to the Royal Commission on Health Services, Ottawa, November 1962, and Dominion Bureau of Statistics, *Canada Year Book 1962*, Ottawa: Queen's Printer, 1962.

These are the services available in an area covering about 40 per cent of Canada's total area, inhabited by about one-fifth of one per cent of her population. Obviously under these circumstances different standards regarding health resources must be applied since it is much more difficult and frequently more costly to reach a hospital, proportionally more beds must be kept available for unexpected emergencies, and nurses and doctors serve fewer people in the North. Considerable time must be spent travelling, unpacking equipment, and organizing space for public health or treatment purposes.¹

In isolated locations the only health facility may be a medicine chest with supplies sufficient to cope with emergencies under field conditions. There may be one among the people in the area with enough training in elementary hygiene, sanitation, first-aid and home nursing to cope with the situation until professional help or advice can be obtained.

In or near larger settlements the nurse working in or from her nursing station provides all the health services that are available, preventive

¹ Northern Health Service, Department of National Health and Welfare, *Health in Canada's North*, brief submitted to the Royal Commission on Health Services, Ottawa, November 1962, p. 5, and Dominion Bureau of Statistics, *Canada Year Book 1962*, Ottawa: Queen's Printer, 1962, p. 238.

as well as treatment. Due to her isolation, the nurse must also shoulder a far greater than usual share of the responsibility for individual cases. Medical advice may be available to her only by radio from a physician several hundred miles away. Clearly, service under such conditions requires not only professional proficiency, but also high ideals of service both of which are found in large measure among the nurses working in the remote areas.

The logistic problems of transport and communications, of bringing patient and health personnel together, establishing sanitary facilities and bringing in supplies are unusually difficult because of distances, cost, and technical problems created by tundra terrain, permafrost, and the harsh climatic conditions. Even if a plane is ready to pick up a patient, the nurse, or a physician, weather conditions may delay the take-off for a week or more.

The challenge of the vast open spaces grows the farther one moves north. It is present in the northern parts of Newfoundland and Labrador, the Province of Quebec, Ontario and even south of the 60th parallel in the western provinces. These areas are distinguished from the more densely populated areas in the south by the thinning population; lack of communications; an economy limited largely to fishing, hunting, trapping, and scattered mineral resources; and the severe climate. These create problems for the provincial administrations in these areas, and particularly also for the Northern Health Division¹ administering health services in the territories.

The following tabulation, based on Table 8-12, compares health service ratios in the territories with the corresponding data for Canada:

	Yukon	Northwest Territories	Canada ^a
Hospital beds per 1,000 population.....	11.3	24.0	10.8
Population per physician.....	1,250	1,263	857
Population per dentist.....	3,000	4,800	3,108
Population per registered nurse.....	288	267	296

^a Data for Canada for 1961; data for Yukon and Northwest Territories for 1962.

The population per square mile is 0.07 in the Yukon, 0.01 in the Northwest Territories, and 7.7 in the area covered by the provinces. In comparing the ratios of the territories with the Canadian figures one must

¹ The Department of National Health and Welfare.

bear in mind the fact that in the Yukon there are about 14, and in the Northwest Territories 55 square miles for every inhabitant.

The need to transport patients or health personnel over distances often of many hundreds of miles creates not only logistic but also economic problems. In the eastern and central Arctic the aircraft is the only means of communication at a cost ranging from about 10 cents to \$1.00 per mile. In the Yukon there is access to many places by road but the travel time creates serious problems in emergencies.¹

Members of the medical profession in the Yukon feel that the health services now operated by the federal department should be administered by the territorial administration.² The same group emphasizes the principle of "a free enterprise type of practice" with prepaid medical insurance,³ but it also stresses the need for government assistance in such matters as travel subsidies⁴ because of the time and cost involved in visits to outlying areas. Subsidies are also suggested to induce physicians to stay or settle in certain locations.⁵ Visits of specialists also should be encouraged by subsidizing their transportation costs.⁶

The problems of distance and service to small communities and scattered population are still greater in the Northwest Territories with a corresponding greater share of the Northern Health Division in the responsibility for both public health and treatment services. These services have been greatly strengthened since the establishment in 1954 of the Northern Health Services Division in the Department of National Health and Welfare. Plans for the further development of the health services in both territories during the period 1962 to 1967 were prepared by the Northern Health Service and have been approved by the Interdepartmental Committee on Federal-Territorial Financial Relations.⁷

Further, the feasibility of successfully overcoming some of the handicaps of distance and inaccessibility has been demonstrated in some of the northern areas of the provinces, e.g., by the Saskatchewan air ambulance service, and in Newfoundland by the chartered air service and the floating clinic.⁸

¹ See, for instance, Transcript of evidence, *Hearings*, Vol. No. 69, pp. 13278, 13292 and 13293.

² *The Yukon Medical Association*, brief submitted to the Royal Commission on Health Services, Whitehorse, 1963, p. 3.

³ *Ibid.*, p. 2.

⁴ *Ibid.*, p. 9.

⁵ *Ibid.*

⁶ *Ibid.*

⁷ Northern Health Service, Department of National Health and Welfare, *Health Services Plan, Northwest Territories 1962-67 (Revised)*, Ottawa: The Department, June 1961, and *Health Services Plan, Yukon Territory 1962-67 (Revised)*, Ottawa: The Department, 1962.

⁸ The northern health services will be further discussed in Volume II of this Report.

SUMMARY OF DEVELOPMENTS

In this chapter we have presented an outline of health facilities as they have developed and now exist, with some indication of changing patterns and needs. The traditional pattern of caring for the mentally ill and tuberculosis patients in segregated institutions is slowly being eliminated as the care of such patients is integrated into general hospitals. General hospitals themselves are growing larger and are being slowly concentrated in urban areas as the population of the country slowly shifts from rural areas. Important changes are still going on in the whole complex of general hospitals as a consequence of the national operation of the Hospital Insurance and Diagnostic Programme. These changes are due partly to the effects of integration of mental and tuberculosis services into general health services, but also to new concepts of the relationship between patient and hospital as evidenced by progressive patient care, rehabilitation services, and home care programmes.¹

The requirements to which these developments point in the future are discussed in Chapters 14 and 15.

¹ The organization of health services, particularly the changing role of hospitals in community health programmes, is discussed in Volume II of this Report.

Drugs as a Health Service

This chapter deals with drugs within the health services complex. Whereas the other major components of this complex, the health professions and institutions provide basically services rendered in Canada, drugs represent commodities coming from an industry that relies heavily on imports and is largely foreign controlled. We have, therefore, found it necessary to deal with some of the special problems we face in Canada concerning the production, distribution, and the quality of drugs and present certain conclusions relating thereto.

Health care is an integrated service designed to safeguard and improve the health of the nation. One vital part of that service is the provision of drugs or pharmaceuticals to persons requiring them for health reasons.¹ A distinction should be made between "prescribed" drugs and "non-prescribed" drugs. Prescribed drugs may mean different things to different people as is noted later. Unless specified otherwise, prescribed drugs are those pharmaceuticals prescribed by a duly licensed medical, dental or other practitioner in Canada.² "Non-prescribed" drugs, or "proprietary medicine" as they are sometimes called, refer to drugs purchased by consumers directly from distributors, mainly retail outlets without prescription by either a physician or a dentist. These range all the way from vitamin preparations to drugs containing antihistamines. Expenditures on drugs of the latter type are based largely on "self medication", that is, on the decision

¹ We define drugs as chemical substances of therapeutic value serving a health purpose. This definition is further elaborated on in this chapter.

² By far the vast majority of drugs are prescribed by physicians. The practising dentist using drugs usually purchases and uses them in the treatment of his patients. Hence most costs of drugs used in dental treatment are included in the fees paid for dental services. The Select Committee of the Ontario Legislature observed: "The practising dentist prescribes few drugs and those used are well established" . . . "The total cost of drugs used by the dental profession in Ontario was estimated at approximately \$1,000,000 which forms a very small percentage of the total drug bill for the province." (Report of the Select Committee of the Ontario Legislature on The Cost of Drugs, Toronto: April 26, 1963, p. 20). "Other" practitioners include osteopaths, podiatrists, etc., licensed by provincial laws.

of the consumer on what to buy and how much to buy.¹ Expenditures of this type have assumed large proportions in recent years involving an annual business in Canada considerably in excess of \$200 million² and representing something like between 56 and 58 per cent of all expenditures on drugs made in this country.³

The outstanding progress made in medicine in the present generation would not have been possible had it not been accompanied by major advances, and in some cases by a breakthrough in the discovery of new drugs and the development of improved pharmaceuticals to help physicians to combat and in many instances prevent disease and illness.

Effective and judicious use of drugs have made it possible not only to improve the health of the nation but also to raise the economic benefits resulting from the provision of health services. The use of many of the newer drugs by physicians facilitates their patients' recovery, and in some instances avoids or minimizes the effect of serious diseases.⁴ Improvement in the state of health of the nation meant increases in the productivity of the working force. Persons released from hospital care sooner because of new or improved drug therapy meant saving costly hospital bed days, a welcome economy in the light of rapidly increasing costs of hospital care.⁵

Even more important than the economic advantages are the numerous benefits to Canadians in reducing or preventing human suffering. Furthermore, drugs have proven to be an invaluable weapon in the arsenal of the medical profession in its fight against disease and emotional disorder. Advances in drug therapy in the last two decades have been particularly spectacular. Most of the progress made has taken place in such industrially

¹ Dr. C. A. Morrell, Director of the Food and Drug Directorate of the Department of National Health and Welfare has pointed out the unique feature of the Food and Drugs Act which discourages self-medication. The Act "prohibits the advertising of any food, drug, device and even cosmetic, as a treatment, preventative or cure of any of a list of serious diseases. It is wisely held that anyone suffering from such diseases should consult his doctor for a proper diagnosis and treatment and that persons with something to sell should not encourage the public to diagnose and treat themselves for these grave conditions. Furthermore, delays in going to a doctor may have serious or even fatal results. I believe this section in Canada's law is unique". (Statement by Dr. C. A. Morrell, reproduced in Minutes of Proceedings and Evidence, No. 4, Special Committee on Food and Drugs, House of Commons, Ottawa: February 5, 1963, p. 133).

² A rough approximation places expenditure on non-prescribed drugs in Canada for 1961 at between \$200 million and \$210 million. Expenditures of this type have continued to rise with the outlay on non-prescribed drugs likely to be considerably in excess of \$200 million in 1963. See also p. 348 of this chapter.

³ See p. 348.

⁴ Examples include insulin, sulphonamides, penicillin and vitamin B₁₂.

⁵ The Manitoba Government stated in its submission that: "The rapid advances and improvements in drug therapy in recent years have resulted in reduced incidence and severity of certain diseases and made possible the care of more patients at home. For example, the community health programme has resulted in a reduction in the number of hospital beds required by the mentally ill and it is estimated that 30% of drugs purchased by the Selkirk and Brandon Mental Hospitals are used for patients under community health programmes". *The Government of Manitoba*, brief submitted to the Royal Commission on Health Services, Winnipeg: January 1962, p. 47.

advanced countries as the United States and the United Kingdom. Canadians have shared in this progress. The dynamics of progress in the drug field are illustrated by estimates which indicate that 90 per cent of the drugs prescribed in 1960 were introduced in the previous two decades; 40 per cent could not have been prescribed in 1954.¹

The major advances in drug therapy over the last two decades have materially affected the practice of the health professions, particularly physicians and pharmacists, the operations of the hospital and the production and distribution pattern of the drug industry.

The traditional relationship between physicians and the drug manufacturer has been altered. As in earlier days the physician continues to be the sole deciding factor when prescribing drugs. But the growing complexity of drug combinations and the great number of new drugs coming on the market, the lack of time to study adequately all the relevant literature relating to advances in drug therapy, and the absence of an up-to-date Canadian Drug Formulary has made it necessary for many physicians to rely increasingly on the promotional literature of drug manufacturers passed on to them in an unending stream of pamphlets, notices, samples, advertising matter and visits from detail men.²

The role of the practising pharmacist has been changing. The growing complexity of the pharmaceutical sciences and their application to medicine have made it necessary for universities to strengthen their courses and to raise the academic requirements for a degree in pharmacy. Further, the demand has been increasing for retail pharmacists to substitute lower priced generic type drugs of equivalent quality for higher priced brand name drugs.³ Hence, increased professional expertise is expected of practising pharmacists. At the same time there has been a change in the practice of dispensing drugs by pharmacists. Prefabrication of ready-to-use drug combinations has largely replaced compounding, and to this extent has reduced dispensing to "packaging" service.⁴

Increasing use of drug prescriptions and higher costs of the newer type drugs have been an important contributing factor to rising costs of

¹ Somers, Herman M., Somers, Anne R., *Doctors, Patients, and Health Insurance*, Washington, D.C.: The Brookings Institution, 1961, p. 24.

² An American study puts the problem facing physicians in the United States in these terms: "Instead of supplying the products the doctor orders, the manufacturer now tells him what he should order and why." . . . Dr. Walter Modell of Cornell University Medical College reports: "The undesirable effects of some new drugs employed therapeutically already have achieved alarming proportions; as one example, they constitute 5 per cent of 1,000 consecutive admissions to a major hospital in the city of New York. Improper prescription of antibiotics has had serious consequences", Somers, *ibid.*, pp. 97 and 98.

³ See, for example, the amendment to the Alberta Pharmaceutical Association Act, passed by the Alberta Legislature in 1962.

⁴ See Chapter 16.

hospital services. This trend has been offset in part by certain economies, e.g., in some cases by earlier release of patients and the greater use of pharmaceuticals in hospitals has contributed to an improvement in the quality of health services. From prior to World War II and to the present time, the total amount of drugs per patient-day used in hospitals has about tripled.¹ More and more drugs are now used in preventive medicine,² and in fighting mental diseases.³ Drug therapy has been an important contributing factor towards reducing the average number of days of hospital stay, a subject we examine in greater detail in Chapters 8 and 14.

In most industrialized countries the drug industry has made great strides in marketing its products. In part, this progress has been due to making available genuinely new or improved products, and, in part to "planned" obsolescence. "Hundreds of products are rushed in and out of production before the average practitioner has any way of evaluating their advantages and limitations."⁴ This subject is discussed further in Chapter 16 in the section dealing with "Physician and Drug Prescription".

The rapid distribution of new drugs has on some occasions led to tragic occurrences as, for example, the birth of deformed children to mothers using thalidomide.

This chapter presents a discussion of the role of drugs in a modern health service, the growing public interest in the subject of drugs, their uses, and their costs. An examination is made of expenditures on drugs and how drug purchases are financed. Some of the key questions relating to the quality of drugs are reviewed, but only briefly in view of the inquiries conducted by a House of Commons Special Committee,⁵ and the steps already taken by the Minister of Health and Welfare to tighten regulations with respect to the manufacture and administration of drugs.

The drug industry is dealt with in Chapter 16 and an assessment of drug costs and drug prices is made in Chapter 17. Our recommendations with respect to an extended programme of prescribed drugs and matters relating to costs, prices and quality of drugs are presented in Chapter 2.⁶

¹ We are basing this observation on an American study which showed the following numbers of drug prescriptions per patient-day: 1938—0.53; 1948—0.98; and 1958—1.32. Walter J. McNerney and others, *Hospital and Medical Economics*, Chicago: The Lakeside Press, 1962, Table 277, p. 619. We are advised that the trend toward increasing use of drugs per patient-day is continuing and that trends in Canadian hospitals are similar to those indicated for American hospitals.

² An example is the almost universal use of poliomyelitis vaccine for children in Canada.

³ See Chapter 5.

⁴ Somers, *op. cit.*, p. 97.

⁵ Special Committee on Food and Drugs, House of Commons, Minutes of Proceedings and Evidence, No. 1, Dec. 19, 1962, to No. 4, Feb. 5, 1963, First Session—Twenty-fifth Parliament, 1962-63, p. 2-52; Minutes of Proceedings and Evidence, No. 1, Aug. 1, 1963, and Subsequent Proceedings, First Session—Twenty-sixth Parliament, 1963, pp. 1 ff.

⁶ Chapter 2, Recommendations 58-82.

DEFINITION OF DRUGS

Drugs constitute a group of substances which come under the broad definition of chemicals. Chemicals and similar substances become drugs if they are defined in such a way that they fall under the definition of a drug as given in the Food and Drugs Act. For example, sodium chloride, or common salt, is a chemical and when used in the pickling of meat it is a food. On the other hand, if it is dissolved in water for use as an intravenous injection, it is a drug. In the case of some drugs, e.g., the biologicals, the identity of the active chemical ingredient is not known in many instances, while in the great majority of drugs the active ingredient may be defined in terms of standard chemical nomenclature. There are standard sets of rules for describing chemical compounds. Many chemical names are unwieldy and a pharmaceutical nomenclature has been developed to overcome this difficulty. However, the chemical name always serves as the standard of reference in determining the identity of a drug, and it is the only name a new drug may have until a recognized proper or non-proprietary name has been developed.

Section C.01.001(b) of the Regulations under the Food and Drugs Act defines "common name" with reference to a drug to mean the name in English or French by which the drug is commonly known. Hence, until a recognized name has been selected, the chemical name of a drug is the common name. A recognized name for a drug is one selected by an official organization dealing in drugs such as the Food and Drug Directorate, the British Pharmacopoeia, United States Pharmacopoeia or the International Pharmacopoeia, and designated as the "proper name" in Canada.

The term "proper name" appears to be distinctly Canadian. In other countries a different title is used to indicate the same thing. The British Pharmacopoeia Commission refers to this name as the "approved name", while the World Health Organization, which is responsible for the Pharmacopoeia Internationalis, refers to the "international non-proprietary name". The Revision Committee of the United States Pharmacopoeia has collaborated with the Council on Pharmacy of the American Medical Association in establishing official names for drugs. Prior to this, the Council on Pharmacy of the American Medical Association used "generic name" as an abbreviated scientific name for general use in prescribing, naming and identifying drugs with unwieldy chemical names. For practical purposes the names "proper name", "approved name", "adopted name", "pharmacopoeal name", "international non-proprietary name" and "generic name", are used as synonyms in the trade.

If a manufacturer wishes to distribute a new drug in Canada he must comply with the provisions of the Food and Drugs Act, and these are

elaborated later in this chapter. In this volume the definition of a "new" drug is that given by Dr. C. A. Morrell, Chief of the Food and Drug Directorate of the Department of National Health and Welfare before the House of Commons Special Committee on Food and Drugs:

"There are several reasons for calling a drug a new drug. No. 1, and the one that occurs probably to all of us at once, is that it is a new chemical structure that has not been used previously in medicine. It may have been known but not used for medical purposes, or it may have been developed simply for medical purposes. These things are now appearing on the market because the pharmaceutical industry is interested in developing new products. If it is a new compound obviously it is a new drug. Now, a combination of known drugs that have not been previously used in combination, is also a new drug. It may be a combination of two or more perhaps well known drugs. This is, in most instances, called a new drug."¹

ROLE OF DRUGS IN MODERN HEALTH SERVICE

The World Health Organization has estimated that in most medical care plans in force in various parts of the world pharmaceutical benefits amount to 10 per cent of total health care expenditures.² According to the Dominion Bureau of Statistics studies of "City Family Expenditures" in Canada for the years 1953 and 1957, prescription drugs have remained a constant 12 per cent of health care expenditures.³ This figure is substantially confirmed by the estimates made by the Saskatchewan Pharmaceutical Association which shows that, generally, prescribed medicines account for 10 or 11 per cent of the health services dollar.

Expenditures on drugs have been increasing substantially over the past several decades. In the Green Book⁴ estimates are presented showing that sales by drug firms in the United States increased eight times in dollar value from 1939 to 1958. Increased drug utilization in Canada appears to have been similarly dramatic. On the basis of statistics derived from annual surveys made by the Canadian Pharmaceutical Association, the Restrictive Trade Practices Commission concluded that between 1951 and 1961 inclusive, the total number of prescriptions dispensed by Canadian pharmacies rose from

¹ Special Committee on Food and Drugs, House of Commons, Ottawa, Minutes of Proceedings and Evidence No. 2, January 29, 1963, p. 34.

² The Saskatchewan Pharmaceutical Association, brief submitted to the Royal Commission on Health Services, Regina, January 2, 1962, p. 14.

³ The Canadian Pharmaceutical Association, Inc., brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 134.

⁴ Material collected for submission to the Restrictive Trade Practices Commission in the Course of an Inquiry under Section 42 of the Combines Investigation Act relating to the Manufacture, Distribution and Sale of Drugs by the Director of Investigation and Research, Combines Investigation Act (referred to hereafter as the "Green Book"), p. 57.

31 million to almost 43 million and the value of these prescriptions rose from \$52 million to almost \$134 million.¹ This increase has been attributed to a number of factors including particularly the development of powerful new drugs, higher prices, rising incomes, increased coverage by medical and hospital insurance programmes, the growing urbanization of Canada's population, changes in the age composition of the population, increased reliance by physicians on drug therapy, and a rising ratio of physicians to population.

Increased spending on drugs in Canada has been measured on another basis by the Department of National Health and Welfare which reported that during 1961, \$364 million were spent on prescribed and other drugs supplied by drug stores, hospitals, other institutions and agencies, physicians and non-pharmacy retail outlets. The estimate given for 1953 is \$201 million reflecting an increase of 81 per cent.² The same report estimates that hospital purchases of drugs more than doubled between 1953 and 1961. On the basis of such trends it seems reasonable to expect the utilization of drugs to continue to climb and probably to increase as a proportion of the total health care dollar.

Expenditures on drugs place almost as heavy a burden on the average Canadian family as paying medical bills. In 1961, for example, expenditures on physicians' services amounted to \$383 million as against \$364 million spent on prescribed and non-prescribed drugs.³ In effect then, drug expenditures are equivalent to 95 per cent of expenditures on physician services. Outlay on prescribed drugs is estimated at approximately \$164 million in 1961,⁴ equivalent to about 43 per cent of medical expenditures. The trend, however, has been for expenditures on medical services to grow more rapidly than expenditures on drugs. Comparing again the period 1953 to 1961, the increases were 115 per cent for physicians' services and 81 per cent for pharmaceutical purchases.

In seeking physicians' services the consumer looks for a medical care package, i.e., all the services required to help him to maintain or regain his health. It was strongly represented to us by the Canadian Welfare Council, among others, that all prescription drugs should be included in any comprehensive medical care plan because, to some extent, different

¹ Restrictive Trade Practices Commission, Report Concerning the Manufacture, Distribution and Sale of Drugs, Department of Justice, Ottawa: Queen's Printer, 1963, p. 388.

² Research and Statistics Division, Department of National Health and Welfare, *Report on the Provision, Distribution, and Cost of Drugs in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa, 1964.

³ These figures differ from the data on prescribed drugs shown in Chapter 11 in that the above figures cover purchased drugs, i.e., prescribed and non-prescribed, while prescribed drugs cover only pharmaceuticals purchased on a physician's prescription from retail outlets and do not include drugs prescribed in hospitals, etc.

⁴ Total expenditures on drugs for 1961 are estimated at \$364 million (see p. 348), on non-prescribed drugs, \$200 million to \$210 million (see p. 340) with prescribed drugs accounting for \$154 million to \$164 million.

kinds of therapy are substitutes for one another.¹ In its submission the Pharmaceutical Association of the Province of British Columbia pointed out that drug therapy has extensively replaced institutional care in the fields of mental illness and tuberculosis. Steroids, used in the treatment of inflammatory diseases have been largely responsible for making unnecessary the sending to hospital of people suffering from these disabilities.²

The integrated nature of health services is such that the exclusion of some of them from a comprehensive medical care plan could affect the quality of therapy. Evidence presented to the Commission indicated that if all drugs were not included, physicians and dentists would be under some pressure to prescribe drugs which were included in preference to those for which the patient would have to pay.³ Similarly if drugs were provided for hospital in-patients only, physicians would be under some pressure to put the patient to bed in a hospital instead of treating him in the out-patient department or under home care plans. In a comprehensive plan, in cases where the physician has a choice between a lower priced drug not covered in the plan and a higher priced drug which is covered, the drug bill might be unnecessarily increased. If expensive drugs were excluded, the most effective drug would not always be prescribed.

Chapter 14 indicates that hospital bed utilization continues to be a major problem. One way of tackling the problem is to make increasing use of drug therapy, which, if properly applied tends to reduce the period of hospitalization. A memorandum issued to hospitals by the British Ministry of Health on August 15, 1961, points out that there is a danger of pushing economy measures affecting drugs in hospitals too far and that "'one extra day in hospital would cost more than the equivalent of four weeks' supply of drugs and dressings'".⁴ The Canadian Pharmaceutical Association suggested that there have been cases where discharged patients could not meet bills which might amount to say \$50 per month for drugs, and who have had to be readmitted to hospitals where maintenance costs could be say \$210 per month.⁵

The Canadian Society of Hospital Pharmacists in its submission makes it clear that although actual drug costs have been rising, savings have been achieved in other areas of health services.⁶ Such other areas, of course,

¹ The Canadian Welfare Council, brief submitted to the Royal Commission on Health Services, Ottawa, May 1962, p. A-122; The Ontario College of Pharmacy, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 6.

² Transcript of evidence, *Hearings*, February 21, 1962, Vol. 29, p. 6307.

³ Transcript, *op. cit.*, May 14, 1962, Vol. 52, p. 9943.

⁴ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 91.

⁵ *Ibid.*, p. 111.

⁶ Ontario Branch of the Canadian Society of Hospital Pharmacists, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 18.

include the shorter periods of hospitalization which have ensued. Other improvements have occurred because in the past decade antibiotics have been developed for the fight against infection, tranquilizers to combat mental disorders, steroids for use against inflammatory diseases, compounds for use in various treatments of cancer and many drugs for use against heart disease. Many of these drugs are relatively expensive and most were unknown ten years ago.

It is important to recognize that the term "prescribed drugs" represents a class of purchases, not a defined group of substances, because it includes

- (a) drugs which are never legally sold except on prescription,
- (b) drugs legally requiring a prescription only in some cases; for example, when codeine tablets go beyond a certain strength,
- (c) drugs requiring compounding by the druggist but not subject to any legal restrictions, and
- (d) over-the-counter drugs, any of which may occasionally be sold on prescription. Among this group are some which only the medical profession is likely to know about because under the Food and Drugs Act, the advertising of drugs for the treatment of certain diseases or conditions is prohibited.

There are approximately 5,000 prescription drugs which are subject to legal restrictions on the Canadian market. When prepared in various pharmaceutical forms and strengths these make a total of some 8,000 items.¹ If the different brands of these items are counted separately there are of course a great many more than 8,000.

Only limited information is available to indicate the relative importance of prescribed and non-prescribed drugs. Two American studies, conducted in 1958 and 1959, suggest that the amount spent in the United States on non-prescribed drugs equals about 50 per cent of the amount spent on prescribed.² The Canadian Sickness Survey of 1951 indicated that expenditures on non-prescribed drugs represented about 58 per cent of the amount spent on prescribed.³ The Saskatchewan Pharmaceutical Association estimated that the cost of non-prescription drugs was about half the cost of prescribed drugs, but acknowledged that this estimate was based on the impression of retail druggists and that non-prescribed drugs were sold by other retailers.⁴ The Manitoba Pharmaceutical Association estimated that

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 74.

² Transcript, *op. cit.*, February 21, 1962, Vol. 29, p. 6300.

³ *Ibid.*, p. 6301.

⁴ *Ibid.*, January 24, 1962, Vol. 19, p. 4405.

sales of non-prescription drugs in pharmacies would be equivalent to between 50 and 60 per cent of prescription sales.¹

The Pharmaceutical Association of the Province of British Columbia suggested that in view of the increase in utilization of prescribed drugs in Canada self-medication appears to have decreased.² This view is supported by the Dominion Bureau of Statistics data which show that between the years 1953 and 1960 inclusive the value of shipments under the classification "Human Pharmaceuticals" increased from 71 per cent to 75 per cent of the broad drug classification while in the same period the value of shipments under the classification "Proprietary Medicines" decreased from 20 per cent to 15 per cent of the same total.³

The study prepared for this Commission by the Department of National Health and Welfare has presented us with estimates of drug expenditures for 1961 as follows:⁴

Prescribed drugs in retail outlets	\$111,100,000
Prescribed drugs distributed in hospitals	\$ 32,500,000
<hr/>	
Sub-total	\$143,600,000
Other drugs	\$220,200,000
<hr/>	
Total	\$363,800,000

The category "other drugs" mentioned above includes prescribed drugs distributed by physicians and by institutions other than hospitals, e.g., homes for the aged. Allowing for drugs distributed by these two sectors it appears that the value of non-prescribed drugs sold in Canada in 1961 amounted to between \$200 million and \$210 million, or between 56 and 58 per cent of total expenditures on drugs. This ratio is very close to the 58 per cent indicated by the Canadian Sickness Survey.

The inadequacy of basic information on what Canadians spend on drugs, distinguishing between prescribed and non-prescribed drugs, indicates the necessity for the appropriate Canadian Government Department to collect more adequate statistics in this area in order to provide more reliable information. Comprehensive and current data on prescribed pharmaceuticals will be necessary to evaluate the costs of a drug programme as well as the

¹ These data exclude non-prescription drugs sold through outlets other than drug stores. *Ibid.*, January 18, 1962, Vol. 15, p. 3724.

² *Ibid.*, February 21, 1962, Vol. 29, p. 6301.

³ Research and Statistics Division, Department of National Health and Welfare, *op. cit.*, p. 37.

⁴ Based on data from Table 9 of study prepared by the Research and Statistics Division of the Department of National Health and Welfare, *op. cit.*

means of financing such a programme. Data on expenditures on non-prescribed drugs will be needed to examine their relative economic importance, and the various claims that are being made about their effectiveness or lack of effectiveness.

We conclude that the Dominion Bureau of Statistics would be the proper agency to collect such statistics and prepare the necessary estimates with the Research Division of the Department of National Health and Welfare undertaking the analyses of the data.¹

The distinction between prescribed and non-prescribed drugs has important economic implications. With respect to non-prescribed drugs competitive market forces are likely to regulate their production and sale, but when it comes to prescribed drugs, the individual purchaser has no discretion in choosing them. Hence the price mechanism cannot operate as effectively in the area of prescribed drugs as it can in the case of non-prescribed drugs. The drug manufacturer can scarcely hope to attract many more customers by lowering prices or, generally speaking, need not fear losing many customers by raising prices. The buyer of prescribed drugs, in turn, will not increase his consumption very much given a lower price. He may not reduce his consumption significantly if he is forced to pay a high price though large expenditures on drugs may lead to a curtailment of other consumer expenditures, or if the drug purchaser has to go into debt this may affect his future level of consumer spending. These considerations do not apply to purchases made by hospitals.

In view of the high costs of many of the new life-saving, life-sustaining and disease-preventing drugs, of the unequal incidence of the burden of paying for these drugs, of the integrated character of health services, and of the fact that market forces do not operate effectively to regulate the drug industry, all of which subjects are dealt with in later sections of this Report, the Commission has concluded that prescribed drugs should be included as a benefit of a comprehensive health care programme for Canada.

To leave non-prescribed drugs outside such a programme, at first sight might appear to conflict with the point made above about the integrated character of health services. However, as has been stated already, competitive market forces are likely to regulate the production and sale of non-prescribed drugs. In any event, there are apparently few if any non-prescribed drugs which are costly, for which there is a valid and appreciable need, and which may be properly used without medical supervision. Thus there should be little tendency for prescribed drugs to be substituted for non-prescribed drugs resulting in an unwarranted increase in social costs.

¹ See Chapter 2, Recommendation 82.

PUBLIC INTEREST

One indication of public concern about apparent shortcomings in the existing system for the supply of drugs to those who require them, is available in the number and character of official investigations and legislative hearings in Canada dealing with drugs as well as the quality, costs and prices of drugs. The following appear to have been among the more important of the recent inquiries:

- (a) On April 14, 1958, the Director of Investigation and Research under the Combines Investigation Act began a general inquiry into the manufacture, distribution and sale of drugs, following informal complaints about the high cost of drugs.
- (b) Extended hearings were held in Toronto in 1960 by a Select Committee of the Legislature of Ontario on Cost of Drugs.
- (c) In May 1961, a Joint Committee of The Manitoba Pharmaceutical Association and the Government of Manitoba made its report on the Retail Structure of Drug Prices in Manitoba.
- (d) On the basis of the material collected by the Director and summarized in a volume referred to as the Green Book, the Restrictive Trade Practices Commission conducted public hearings from coast to coast throughout the summer and fall of 1961.
- (e) On April 5, 1962, an Act was proclaimed in Alberta which permits druggists to substitute an equivalent generic drug for a brand name drug in any prescription, unless substitution is specifically forbidden by the physician.
- (f) On December 7, 1962, a special committee of the House of Commons was appointed to consider and report upon the law and practices relating to the control of the introduction, marketing, and use of drugs.
- (g) In December 1962 the Special Committee on New Drugs, appointed by the Royal College of Physicians and Surgeons of Canada, at the request of the Minister of National Health and Welfare, submitted its report (published as Appendix A in the Minutes of Proceedings and Evidence, Special Committee on Food and Drugs, House of Commons, Ottawa: February 5, 1963, pp. 127 ff.).
- (h) On January 4, 1963, the Report of the Restrictive Trade Practices Commission concerning the Manufacture, Distribution and Sale of Drugs was published.
- (i) On April 26, 1963, the Select Committee of the Ontario Legislature issued its Report on the Cost of Drugs.

- (j) On July 26, 1963, a House of Commons Committee on Drugs and Chemical Food Contamination was established with its terms of reference including the "safety and cost of drugs".
- (k) On August 2, 1963, the Special House of Commons Committee on Food and Drugs presented its first report.

Similar concern has been demonstrated in other countries. Antibiotic drugs were the subject of a special study made by the Federal Trade Commission in the United States. The Commission's "Economic Report on Antibiotics Manufacture" was released in August 1958. Also in the United States, a Report of the Committee on the Judiciary, United States Senate, made by its Subcommittee on Antitrust and Monopoly covering drug prices, and commonly known as the Kefauver Report, was issued in 1961. In 1963 the Federal Trade Commission found five leading drug companies guilty of a price-fixing conspiracy in the distribution and sale of tetracycline.

In Britain several official inquiries have been conducted. In 1958 the Ministry of Health issued an "Interim Report of the Committee [commonly known as the Hinchliffe Committee] on Cost of Prescribing". In 1959 the "Final Report of the Committee on Cost of Prescribing" was made.

Another indication of public concern about the existing system under which drugs are manufactured and distributed in Canada, is available in the number and the pressing nature of briefs submitted to us and of representations made in the course of our hearings. The following is a list of the organizations which devoted particular attention to the subject of drugs:

- The Alberta Pharmaceutical Association Inc. (Vol. 23)¹
- Canadian Conference of Pharmaceutical Faculties (Vol. 60)
- The Canadian Federation of Agriculture (Vol. 33)
- The Canadian Foundation for the Advancement of Pharmacy (Vol. 56)
- Canadian Labour Congress (Vol. 60)
- The Canadian Medical Association (Vol. 53)
- The Canadian Pharmaceutical Association, Inc. (Vol. 60)
- Canadian Pharmaceutical Manufacturers Association (Vol. 56)
- Canadian Society of Hospital Pharmacists (Vol. 56)
- The Canadian Welfare Council (Vol. 64)
- Committee for the Furtherance of Creative Research in the Pharmaceutical and Allied Industries (Vol. 66)
- Connaught Medical Research Laboratories (Vol. 51)

¹ The bracketed references indicate where each submission may be found in the Transcript of evidence of the Royal Commission on Health Services.

- Cooperative Union of Canada Health Services Society (Vol. 30)
Faculty of Pharmacy, University of Toronto (Vol. 52)
The Government of the Province of Alberta (Vol. 22)
The Government of the Province of Manitoba (Vol. 12)
The Manitoba Pharmaceutical Association (Vol. 15)
The Medical Section of the Canadian Pharmaceutical Manufacturers Association (Vol. 56)
New Brunswick Pharmaceutical Society (Vol. 10)
Nova Scotia Pharmaceutical Society (Vol. 4)
Ontario Branch of the Canadian Society of Hospital Pharmacists (Vol. 56)
The Ontario College of Pharmacy (Vol. 56)
The Ontario Retail Pharmacists' Association (Vol. 50)
The Pharmaceutical Association of the Province of British Columbia (Vol. 29)
Prescription Services Inc. (Vol. 50)
Saskatchewan Branch of the Canadian Society of Hospital Pharmacists (Vol. 19)
Saskatchewan Farmers Union (Vol. 18)
The Saskatchewan Pharmaceutical Association (Vol. 19)

CONSUMER EXPENDITURES ON PRESCRIPTION DRUGS

The Canadian Pharmaceutical Association conducts an annual survey of Canadian retail pharmacy operations. The survey covering the year 1960 indicates that per capita expenditures by Canadians in retail pharmacies for prescription drugs amounted to \$7.36. In that year almost 43 million prescriptions were dispensed with an estimated total value of \$131 million. The number of prescriptions purchased by Canadians from retail pharmacies averaged 2.41 per capita, an increase of 9 per cent since 1951, and the price of such prescriptions averaged \$3.06, an increase of 82.1 per cent since 1951.¹ The 1961 survey disclosed that the average price increased to \$3.14.²

When one adds to these estimates the prescriptions which are written by physicians, but which are not dispensed by retail pharmacies (in other words prescriptions which are dispensed by the physicians themselves, by hospitals, etc.) the number of prescriptions utilized rises to 3.2 per capita,

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 123.

² Restrictive Trade Practices Commission, *op. cit.*, p. 388.

and the per capita cost to \$9.79 at retail value. On this basis the Canadian Pharmaceutical Association estimates that the population of the country received prescription services in 1960 valued at \$177 million.¹

The Pharmaceutical Association of the Province of British Columbia conducted a prescription survey in 1960 of the retail pharmacies in British Columbia, and of drugs supplied through the B.C. Hospital Insurance Service and other provincial and private agencies. The only drugs omitted were those supplied through federal government agencies such as the Department of Veterans Affairs and the hospitals of the Indian Affairs Branch. The results of the survey indicate that the per capita cost of prescription drugs in British Columbia in 1960 was \$11.36. Of this amount \$9.24 was spent directly through retail pharmacies with the balance made up of drugs supplied by hospitals, government institutions, etc.²

Based on surveys which it had conducted, The Alberta Pharmaceutical Association Inc. concluded that Alberta citizens obtained 2.75 prescriptions each per annum. Using \$3.16 as the average cost per prescription, the Association estimated that the per capita expenditure on prescription drugs in Alberta was therefore \$8.69.³

During 1961, the Saskatchewan Pharmaceutical Association conducted a survey to find the actual cost of providing prescription drugs for the population of Saskatchewan covering the year 1960. Returns were obtained from 40 per cent of the province's retail pharmacies. The Association concluded that on the average each person in Saskatchewan had about 3.5 prescriptions filled at a total cost of approximately \$9.⁴ The Association also pointed out that the Dominion Bureau of Statistics report on "City Family Expenditures" covering the year 1957, indicates that prescription drugs averaged \$8.15.

The New Brunswick Pharmaceutical Society organized a prescription survey covering the year 1960, and in addition obtained information from provincial and federal agencies. These surveys place the cost of drugs per capita in New Brunswick at \$7.90 of which \$5.80 per person was expended directly by consumers purchasing drugs from retail pharmacies, and the balance was financed through taxation or insurance contributions.⁵

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 187. Using the method of estimation described on p. 348 yields a value of prescribed drugs between \$154 million and \$164 million for 1961.

² The Pharmaceutical Association of the Province of British Columbia, brief submitted to the Royal Commission on Health Services, Vancouver, February 1962, p. 16.

³ The Alberta Pharmaceutical Association Inc., brief submitted to the Royal Commission on Health Services, Edmonton, February 1962, p. 5.

⁴ The Saskatchewan Pharmaceutical Association, *op. cit.*, p. 13.

⁵ New Brunswick Pharmaceutical Society, brief submitted to the Royal Commission on Health Services, Final Submission, Fredericton, May 1962, p. 2.

While the average cost of drugs may be absorbed fairly easily by the average pocketbook, the incidence of heavy drug expenditures is rather unequal. Even the average costs referred to above may be a burden to large families in low income brackets. Also, where drug requirements fall in the higher range of drug prices, even the average pocketbook may be strained. There is, in addition, what may be called the catastrophic impact of drug costs, that is, the effect produced where prescribed drugs of more than moderate price must be used over a long period of time.

Fairly adequate information is available about the range and frequency distribution of drug prices. In 1957, Professor H. J. Fuller of the Faculty of Pharmacy of the University of Toronto undertook a prescription survey covering 182 pharmacies and 42,545 prescriptions. Of the total number of prescriptions 46.3 per cent were priced at \$2 or less, 68.8 per cent were \$3 or less, and 88.6 per cent were \$5 or less. However, 1.1 per cent cost more than \$10 each.¹

In 1960, a similar study was conducted within the Province of British Columbia. The results were not greatly different, although there was a general upward shift in prices. Of the total number of prescriptions, 33.7 per cent were priced at less than \$2, 58.5 per cent were under \$3, and 84.7 per cent were under \$5. Of the total 1.4 per cent cost \$10 or more.²

We were also referred to an American study called the Abbott National Prescription Survey covering the year 1960. Of the total number of prescriptions, 34.8 per cent were priced at \$2 or less, 59.2 per cent were priced at \$3 or less, and 84.8 per cent were priced at \$5 or less. Of the total 1.5 per cent were priced at over \$10.³ The results are remarkably close to those obtained in the same year in British Columbia.

The Pharmaceutical Association of Saskatchewan claimed that in its experience only a comparatively small proportion of the population accounts for a large proportion of all expenditures for prescribed drugs. The Association's views were supported by the results of a Health Information Foundation Survey in the United States in December 1960, which showed that of the total number of people surveyed:

- 61 per cent made no expenditures for prescribed drugs
- 26 per cent spent from \$1 to \$24 per annum
- 6 per cent spent from \$25 to \$49 per annum
- 4 per cent spent from \$50 to \$99 per annum
- 2 per cent spent from \$100 to \$199 per annum
- 1 per cent spent over \$200 per annum.

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, Appendix K.

² The Pharmaceutical Association of the Province of British Columbia, *op. cit.*, Appendix B, pp. 7-8.

³ The Saskatchewan Pharmaceutical Association, *op. cit.*, p. 13.

The Health Information Foundation also estimated that 15 per cent of the total population paid about 70 per cent of the total drug bill.¹

The incidence of drug expenditures is to some extent predictable, particularly in average terms for certain age groups. On the other hand, it is difficult to foresee the incidence of very heavy drug costs, for serious illnesses may strike at random. The experience of Prescription Services Incorporated in Windsor, Ontario, (a voluntary prepaid drug plan about which more is said later) is that people over 65 use almost double the number of prescriptions per month used by the members of the plan as a whole. In addition, the average prescription cost according to the plan schedule for the older group was \$4.25 as compared to the average prescription cost of \$4.05 for the regular group.² A study of the pharmaceutical benefits provided for public assistance cases in Saskatchewan confirms that older people have a substantially higher utilization rate. It also indicates that on the average, females in the group utilized 20 per cent more prescriptions than the males.³

We conclude on the basis of the evidence presented to us that it is the unequal and generally unpredictable incidence of heavy drug costs that have given rise to the greatest concern on the part of the public, rather than what has been described as the "high costs" of drugs as such. This concern continues to prevail notwithstanding the fact that drugs are provided free or on an assisted basis to certain population groups by government and private agencies.

FINANCING OF EXPENDITURES ON DRUGS

Under the federal Hospital Insurance and Diagnostic Services Act, agreements have been entered into between the Government of Canada and the individual provinces which make provision for the supply of drugs as part of the insurance services.⁴ According to the Canadian Pharmaceutical Association "The provision of hospital insurance has done much to eliminate health care costs of catastrophic proportions. However, the remaining elements of health care, including pharmaceutical services, still present a problem to many Canadians. This is particularly true for the indigent, for persons with limited income, and for those suffering from chronic illness which requires continuous costly therapy. The acute illness, resulting from

¹ *Ibid.*, p. 13.

² Transcript, *op. cit.*, May 10, 1962, Vol. 50, p. 9589.

³ The Saskatchewan Pharmaceutical Association, *op. cit.*, Appendix A, p. 6.

⁴ Research and Statistics Division of the Department of National Health and Welfare, *op. cit.*, p. 79.

injury or disease, may often deal a shattering financial blow to families who are quite able to support themselves under normal circumstances".¹ There are variations in the different provincial hospital services plans. For example, the major portion (approximately 90 per cent) of costs of drugs to in-patients in Ontario hospitals is covered under the all-inclusive hospital day rate. Most Ontario residents are members of the insurance plan operated by the Ontario Hospital Services Commission. The cost of drugs per patient-day in most Ontario hospitals ranges from 90 cents to \$1.10.² In Saskatchewan, on the other hand, the hospital services plan covers the cost of a selected list of drugs supplied to hospital patients. This deficiency in coverage is said to have resulted in a heavy financial burden occasionally falling upon seriously ill patients.³ Representatives of the Saskatchewan Branch of the Canadian Society of Hospital Pharmacists referred to patients with drug bills amounting to \$50 per day which were not covered by the plan.⁴ One patient, whose life was truly saved by treatment, was confronted with a bill for drugs of \$1,500. Drugs which are chargeable to the patient amount to 20 to 25 per cent of the dollar volume of all drugs used in Saskatchewan hospitals. Examples mentioned to us of expensive drugs which fall in this category are hydro-cortisone, penbriton (a synthetic penicillin) and spontim (an antibiotic for bacterial endocarditis).⁵

Another important means, apart from the hospital insurance plans, by which users of drugs are relieved of some of the burden of paying for them, exists in the provision of drugs on an assisted basis to recipients of welfare payments by provincial governments. Although statistics are not available from all provinces, according to the Canadian Pharmaceutical Association, information received from the four western provinces indicates that an average of 3.7 per cent of the population of the West is in the welfare category defined to include recipients of allowances for the disabled, old-age assistance, blind persons allowances, child welfare, etc. This proportion ranges from a low of 1.8 per cent in Manitoba to a high of 5.2 per cent in Saskatchewan. The Canadian Pharmaceutical Association applied the average percentage to the population of Canada and concluded that there are in Canada some 670,000 individuals who are to some degree at least dependent on one level of government or another for health care.⁶

As indicated, the provision of pharmaceutical services to indigents appears to vary greatly from one province to another. There does not seem to be any standard method of determining need nor any standard criteria for

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 158.

² Ontario Branch of the Canadian Society of Hospital Pharmacists, *op. cit.*, p. 18.

³ Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4450.

⁴ *Ibid.*

⁵ *Ibid.*, p. 4451.

⁶ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 135.

deciding upon what may be supplied.¹ According to the Canadian Pharmaceutical Association, "In the provinces of British Columbia, Saskatchewan, Manitoba and Newfoundland, financial provision for necessary pharmaceutical and other health care services to be provided to indigents, is made available by the provincial governments. In Alberta, Quebec, New Brunswick and Nova Scotia, these services are, in general, provided for hospital in-patients only. In Ontario, provision for pharmaceutical services provided to indigents is made by all municipalities down to the township level, and the municipalities are subsequently reimbursed in part by the provincial government. In Prince Edward Island, there appears to be no specific financial provision for health care services needed by the indigent population".²

In addition to the government sponsored hospital insurance schemes and arrangements for the care of indigents there is a third important method by which some users of drugs are assisted in meeting the cost of drug purchases. This involves the private insuring agencies and companies writing health care policies. Such health care policies, which may be written for individuals or for groups of individuals, now frequently extend their coverage to include drug expenditures. The policy holder is reimbursed for payments he has made for drugs after submission of the necessary claim forms. The deductible principle is used and the policy holder often must underwrite himself the first \$50 per year which he spends on drugs. These policies usually include a co-insurance provision under which the policy holder must pay for a percentage of the cost of the prescription.³ In 1960 there were apparently about 2,000,000 persons who had major medical insurance but it is not known how many of these were eligible as well for drug benefits.⁴ Recently a few voluntary non-profit plans have also widened their coverage to include provision for drug benefits. Among these is the plan of the Ontario Blue Cross which has the deductible feature.⁵ The Canadian Pharmaceutical Association expressed the opinion that while insurance with a deductible provision protects the individual under normal circumstances against unpredictable burdensome expenditures, it "entails an intolerable burden where such expenditures must be paid by recipients over a relatively short period of time".⁶

A number of the submissions which were made to us referred at some length to an insurance scheme covering drugs alone, operated by Prescription Services Inc., a company which was organized by a number of retail druggists

¹ *Ibid.*, p. 137.

² *Ibid.*, p. 136.

³ *Ibid.*, p. 111.

⁴ Estimates of the number of persons covered by major medical insurance vary (see Chapters 10 and 18).

⁵ Research and Statistics Division, Department of National Health and Welfare, *op. cit.*

⁶ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 183.

in Ontario. The operations of this organization throw a good deal of light upon the problems associated with the financing of drug expenditures by a private agency. For this reason we believe its experience deserves careful consideration.

Prescription Services Inc. was incorporated in July 1957.¹ It began its operations in Windsor and Essex County in Ontario, but it now has 650 member pharmacies in various parts of the province.² Individual subscribers to the Green Shield Plan make regular premium payments, and they are then eligible to obtain the drugs they require from any member pharmacy by payment of 35 cents per prescription. Prescription Services Inc. undertakes to reimburse member pharmacies for drugs compounded or dispensed to subscribers and their dependants according to an agreed-upon schedule of prices less a 10 per cent deduction for administrative costs, and less a further reduction if necessary to keep the Plan solvent.³ This further reduction at the present time amounts to 10 per cent.⁴

After the first 15 months of operations, it was recognized that the Plan was not self-sustaining and that the premium rate structure would have to be increased.⁵ According to Prescription Services Inc., the reason the original premium rates represented such a wide error is that none of the surveys that had been made adequately took into account the increase in utilization which would occur when the impact of drug costs was reduced through the averaging effect of a monthly premium. (The Green Shield Plan, of course, does not aim at reducing total drug costs, but simply averages out over time and over the whole membership the payments for drugs made by individuals covered by the Plan.) Neither did the survey, and therefore the rates, take into account the fact that age and sex serve to differentiate persons with respect to utilization of drugs more than any other characteristics.⁶

Enrolment since inception of the Plan has been upon a group basis only. The group may be associated for any reason so long as it has no direct relation to health. In order to avoid insuring only poor risks, the Plan originally required that a high proportion of the group be enrolled.⁷ After the first 15 months of operation when the Plan gave notice of its intention to raise the premium rates, individuals covered by the Plan were given the opportunity to opt out, and approximately 17 per cent did so. In nearly all

¹ Research and Statistics Division, Department of National Health and Welfare, *op. cit.*

² Prescription Services Inc., brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 27.

³ *Ibid.*, p. 7.

⁴ *Ibid.*, p. 26.

⁵ *Ibid.*, p. 38.

⁶ *Ibid.*, p. 9.

⁷ *Ibid.*, p. 23.

cases, according to Prescription Services Inc., the individuals making up the 17 per cent who left the Plan were healthy people.¹ This, of course, necessitated a further increase in the per capita costs of operating the Plan.

Notwithstanding the increased premiums, and the provision of the additional 10 per cent reduction in the amount by which pharmacists are reimbursed, the Plan has continued to face financial difficulties. The pharmacists who organized the Green Shield Plan originally provided a loan fund of over \$11,000. Subsequently the Ontario Retail Pharmacists Association made a donation of \$3,000 to the Plan and individual pharmacists donated approximately \$18,000 over a three-year period. Without this financial assistance "the plan could not have operated since its actual fiscal operations outside of loans and donations have been continuously at a loss".² The financial problems facing the Plan do not mean that it has provided extravagant benefits. As we have already pointed out there is a 35 cent prescription fee which the operators of the Plan believe deters the extension of the prescribing practice of physicians to what are usually non-prescription items "most of which cost 35¢ or less, as for instance, castor oil, household medicine chest items, etc."³ In addition to the 35 cents prescription fee there is a quantity limitation which prevents the stockpiling of drugs or their resale for cash.⁴ Although it is said that only 2.5 per cent of the normal volume of prescribed drugs is excluded from the Green Shield Plan,⁵ there is at least one important drug, namely insulin, which is excluded because of high frequency of use.⁶

At the time of the presentation of its brief in May 1962 by Prescription Services Inc., the Green Shield Plan had 1,500 subscribers only.⁷ It had no current intention of extending the Plan beyond the Province of Ontario.⁸ The hope of the operators of the Plan is that a substantial increase in the number of subscribers may take place which will result in a rate reduction. This is thought to be particularly likely if the Green Shield Plan becomes one of the fringe benefits provided under labour union contracts. In these circumstances, simple administrative efficiency would require that 100 per cent of the bargaining unit enrol, thereby ensuring a broad range of healthy persons to balance those who have a more active need of drugs.⁹

Evidence presented to us suggests that druggists outside Ontario do not look upon the Green Shield Plan as providing any kind of pattern for the future. For example, the Pharmacy Association of the Province of British

¹ *Ibid.*, p. 40.

² *Ibid.*, p. 22.

³ *Ibid.*, p. 34.

⁴ *Ibid.*, p. 29.

⁵ *Ibid.*, p. 34.

⁶ *Ibid.*, p. 28.

⁷ *Ibid.*, p. 43.

⁸ *Ibid.*, p. 49.

⁹ *Ibid.*, p. 11.

Columbia expressed the opinion that Prescription Services Inc. is not economically capable of standing on its own merits because it has no popular appeal. Most people do not think of heavy drug costs as the kind of disaster which they should be insured against. The Plan is not attractive because the premium cost is close to the average cost of prescription drugs to Canadians. In other words, the Plan does nothing to lower drug costs. The appeal of the Green Shield Plan therefore is limited to those who are poor insurance risks.¹ The Saskatchewan Pharmaceutical Association expressed a similar view. They particularly stressed the fact that the limited number of participants in the Green Shield Plan means that the Plan is loaded with higher risk groups with the result that prescription costs under the Plan are about double the average for the country.²

Perhaps the most persuasive evidence that a substantial need exists for a different method of financing the public's drug requirements is seen in the experience of substantially increased utilization wherever drugs have been supplied as part of a government health service.

Under New Zealand's scheme, between the years 1943 and 1960, the number of prescriptions dispensed per capita rose from 2.1 to 5.9 per annum. At the same time the average price of each prescription more than doubled. These increases occurred while more stringent limits were being imposed on the duration of treatment to be provided by the individual prescription. At first there was no limit; then a limit was imposed so that prescriptions should not provide for longer than 15 days' treatment; this was later reduced to 10 days, and it was again reduced to the current 7 days.³ Drug benefits as a proportion of expenditures on all health benefits in New Zealand have nevertheless, gradually risen from 24.5 per cent in 1950-51 to 29.9 per cent in 1959-60.⁴

In Australia, pharmaceutical benefits are limited to a list of "life-saving" drugs. Nevertheless, 70 to 80 percent of all prescriptions are said to be covered by the Plan.⁵ Utilization rates have increased from 1.09 in 1953 to 2.40 in 1960, while at the same time the average price per prescription has increased by 36.7 per cent over this seven-year period.⁶

Under the National Health Service in Britain, between 1949-50 and 1957-58 the average price per prescription approximately doubled, while the

¹ The Pharmaceutical Association of the Province of British Columbia, *op. cit.*, p. 19.

² Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4403.

³ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 180.

⁴ *Ibid.*, p. 169. It may be noted that the percentages given above are much higher than the general estimates made by the World Health Organization referred to earlier. (Quoted in the brief submitted to the Royal Commission on Health Services of the Saskatchewan Pharmaceutical Association, *op. cit.*, p. 14.)

⁵ Research and Statistics Division, Department of National Health and Welfare, *op. cit.*

⁶ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 181.

average number of prescriptions per capita was held constant at 5.29 per annum perhaps because the contributory fee was twice increased during the period.¹

In Norway, early experience with the provision of drug benefits resulted in costs which made it impossible to underwrite the provision of all drugs. Consequently, at the present time the sickness funds pay only for a limited number of drugs required for long-term illnesses. There is however, some government control over the importation, advertising, distribution and prices of drugs and the profits thereon.²

In general, according to the Canadian Pharmaceutical Association, in Britain, Australia, New Zealand, Norway, Denmark and the Netherlands the proportion of direct participation by the patient in the payment for each prescription has had to be increased over the years of the country's experience with its health plan. All reports indicate that each programme has experienced rising annual drug bill costs.³ At this point the following comment from an article in the Canadian Medical Association Journal is pertinent.

"VIRTUALLY since the beginning of the National Health Service in Great Britain the amount paid out on drugs has caused great agitation in many circles, and to the end of economical prescribing there exists a considerable official team to give the doctor advice and criticism."⁴

The more limited experience we have had in Canada points in the same direction. The brief presented to the Restrictive Trade Practices Commission by the Government of Saskatchewan reports a great increase in the average expenditures for drugs and appliances per welfare beneficiary under the provincial health schemes. Between 1949-50 and 1958-59 such expenditures increased from \$6.24 to \$20.51 per capita for recipients of old age pensions, from \$2.67 to \$7.42 per capita for recipients of mothers' allowances, and from \$5.86 to \$13.32 per capita for recipients of blindness allowances.⁵ In their submission to us the Saskatchewan Pharmaceutical Association included the following comment: "Utilization of the pharmaceutical benefits of the health program has shown a persistent and gradual increase over the years. In the year ending March 31, 1950 an average of 3.5 prescriptions were paid for on behalf of each eligible beneficiary in Program I. During the year ending March 31, 1959 (nine years later) this

¹ See Ross, T. M., "An Analysis of Pre-Payment of Prescriptions and the Green Shield Plan", as quoted in Nova Scotia Pharmaceutical Society, brief submitted to the Royal Commission on Health Services, Halifax, October 1961, p. 19.

² The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 170.

³ *Ibid.*, p. 172.

⁴ From an article "Prescribers' Journal", Canadian Medical Association Journal, July 1961 issue, quoted in Report of the Restrictive Trade Practices Commission, *op. cit.*, p. 254.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 389.

figure had risen to 7.3—more than double. At the same time, more than 30% of the eligible population failed to receive any prescriptions at all.”¹ Conditions elsewhere in Canada appear to be somewhat similar. We were told by the Manitoba Pharmaceutical Association that the experience under the Manitoba Medicare Plan has been that the cost of free medication under that plan has far exceeded what was anticipated.² The New Brunswick Pharmaceutical Society pointed out that the drug utilization rate in New Brunswick was less than half what it was in Britain or New Zealand, and it concluded that the rate under any national health scheme would therefore increase.³

Considering the possibility of the inclusion of drug benefits in a national health service, the Canadian Pharmaceutical Association estimated that increases in the utilization rate and changes in other factors in three years’ time might mean that “the total cost of providing for pharmaceutical services under a comprehensive program will approximate \$313,500,000”.⁴ Looking at the same problem, Prescription Services Inc. calculated that the drug costs for its subscribers average \$1.56 per person per month or \$18.72 per year. For 19 million people this would amount to over \$350,000,000 per year as a national drug bill.⁵ It should be recalled, however, that Prescription Services Inc. does not deal with a representative population, but includes a higher than average proportion of people with more active need for drugs.⁶

Nevertheless, potential increases of this order of magnitude in the total cost of the national drug bill raise inescapable questions about the possibility of waste. In their representations to us the Ontario Retail Pharmacists Association argued that the experience of Prescription Services Inc. indicates that many people are unable to get prescriptions filled because they cannot afford them. The Association said that per capita utilization of drugs under a national health programme can be expected to increase not because people use more drugs but because they can then use the drugs they need.⁷ The same view was expressed by the President of the Saskatchewan Pharmaceutical Association who said: “I am not inclined to think there are many abuses, that the reason for the increased cost that we mentioned in our Saskatchewan plan was that people became gradually aware of the benefits they could derive from this plan and began to make

¹ The Saskatchewan Pharmaceutical Association, *op. cit.*, Appendix A, p. 5.

² Transcript, *op. cit.*, January 18, 1962, Vol. 15, p. 3713.

³ New Brunswick Pharmaceutical Society. Final Submission, *op. cit.*, p. 6.

⁴ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 188.

⁵ Transcript, *op. cit.*, May 10, 1962, Vol. 50, p. 9586.

⁶ We estimate that the nation’s prescribed drug bill assuming universal coverage and including patient contributions to the costs of prescribed drugs would amount to \$234 million in 1966 and \$361 million in 1971 (see Table 20-15).

⁷ Transcript, *op. cit.*, May 10, 1962, Vol. 50, p. 9570.

use of them, and I don't think for a minute it was a frivolous use at all. I think these were people who had refrained from seeking medical attention or refrained from getting prescriptions because they didn't feel they could afford them".¹ Some qualification of this view may however be required. The Canadian Pharmaceutical Association stated that "it must be recognized that there is an economic barrier and/or natural reluctance which is not related entirely to the financial circumstances of the individual and which causes resistance towards the assumption of the costs of health care services. . .".²

There are, we believe, at least three other considerations which bear on the size of the bill which would have to be faced if prescribed drugs are treated as a health service benefit. We were reminded that there are many sources of medication presently available to the consumer other than the retail pharmacies. The most important among these are physicians who make drugs available to their own patients, the hospital pharmacies, various government agencies, various voluntary agencies, private nursing homes, industrial dispensaries, and others. The Canadian Pharmaceutical Association commented that "it must be assumed that the initiation of a comprehensive program would relieve many of these agencies from the obligation of supplying medication".³

An important and direct but perhaps not obvious additional influence on the consumption of drugs arises out of the simple availability of drugs and of doctors. To illustrate, in Saskatchewan in 1961 there were 5,427 prescriptions dispensed per 1,000 persons in rural locations and 7,418 prescriptions dispensed per 1,000 persons in cities.⁴

The third consideration is that "a physician is most disposed to prescribe the needed drug without regard to cost when he knows that it will not entail economic hardship upon his patient to have it dispensed".⁵ There is evidence that at least with respect to some high-priced drugs the same doctors will prescribe a greater quantity per prescription where they are treating patients for whom a third party pays the cost of medication than when they are treating patients who must pay for the drugs themselves.⁶ In addition, it has to be recognized that under a prepaid prescription plan some people may see a doctor and receive a prescribed medicine when in other circumstances they would buy non-prescription preparations.⁷

¹ *Ibid.*, January 24, 1962, Vol. 19, p. 4412.

² The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 178.

³ *Ibid.*, p. 178.

⁴ Research and Statistics Division of the Department of National Health and Welfare, *op. cit.*, p. 114.

⁵ The Ontario Retail Pharmacists' Association, brief submitted to the Royal Commission on Health Services, May 1962, p. 42.

⁶ New Brunswick Pharmaceutical Society. Final Submission, *op. cit.*, p. 6.

⁷ The Saskatchewan Pharmaceutical Association, *op. cit.*, p. 12.

Some countries have tried to keep within tolerable bounds the bill for drugs which the public purse is compelled to meet, by limiting in some way the drugs to be supplied under the national health service. In this connection the Hinchliffe Report on the cost of prescribing in Britain compared the Australian, Danish, and New Zealand plans. The findings of the Hinchliffe Committee were said by the Faculty of Pharmacy of the University of Toronto to indicate that the plans mentioned were administratively too complex, and in the case of Australia, the list of permitted drugs was too limited to provide a full range of clinical treatment.¹

The more common method of keeping within tolerable limits the drug costs which have to be paid for out of public funds is to require direct participation by the patient in the payment of each prescription. This has two effects. It accomplishes a sharing of the total costs, and to the extent that it encourages responsible use it reduces total costs. In the opinion of the Canadian Pharmaceutical Association direct participation by the patient in the payment of the prescription can have a significant effect in deterring the over-utilization which arises from the prolonged consumption of drugs which are no longer required to meet a specific disease-diagnosis.² The Association also expressed the opinion that a nominal deterrent charge probably does prevent abuse particularly in relation to low-cost items which are not usually prescribed, such as household medicine chest articles.³

The Canadian Pharmaceutical Association points out, however, that increases in prescription fees charged to patients in Australia and Great Britain appear to have had the effect of stimulating the prescribing of larger quantities per prescription. Australia introduced a fee of five shillings per prescription in March 1960, and the drug utilization rate increased 20 per cent in that year over the previous year. In Great Britain the prescription fee payable by the patient was increased from one shilling to two shillings in March 1961.⁴ Notwithstanding this experience, as indicated above, a prescription fee payable by the patient is commonly employed by those countries in the western world which include drugs in their health care programmes.

In Sweden there is one list of drugs which are provided free of charge to the patient. There is a second list for which the patient pays the first three Crowns of the cost of the prescription plus half of the remaining

¹ Transcript, *op. cit.*, May 14, 1962, Vol. 52, p. 9944.

² The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 176.

³ *Ibid.*, p. 182.

⁴ *Ibid.*, p. 181.

cost.¹ In Denmark pharmaceutical benefits cover 800 drug items. The insured pays the pharmacist and is reimbursed by the plan for three-quarters of the purchase price.² In France the health plan provides an extensive list of drugs as a benefit. The patient pays for the medicine and is reimbursed for a proportion ranging from 70 to 100 per cent of the purchase price.³ In Germany 85 per cent of the population is covered under the health plan. There is an unofficial list of prescribed drugs which may be claimed as a benefit, although the doctor is free to prescribe what he considers necessary, with payment subject to approval of the fund. There is a direct charge to the patient of 0.50 Deutschemarks per prescription.⁴

As implied above, there is sometimes controversy over the question of whether or not a direct payment by the patient does in fact deter over-utilization. Apart from what seems to us to be the inescapable logical inference that it should have a tendency to discourage waste, and apart from the wide-spread use of such a payment in other countries, experience in Canada also appears to support the same conclusion. It was indicated to us that in British Columbia, welfare recipients pay nothing for drugs and the utilization rate is 10 per person per year compared with 2.9 per person per year for the population as a whole. In Saskatchewan, welfare recipients pay 50 per cent of the cost of drugs and the utilization rate is 6.7 per person per year compared with 2.7 per person per year for the population as a whole.⁵ In other words, while the utilization rates are similar in the two provinces for the population as a whole, there is a substantial difference in the utilization rates for the welfare groups. While the welfare group in Saskatchewan embraces a wider section of the population we do not think this reduces the significance of the comparison.

The Government of Manitoba suggested to us that "any extension of health insurance programmes be designed to include coverage for drugs outside of hospitals with an appropriate deterrent factor".⁶ While we agree with the principle of an extension of a prepaid health services programme to include drugs and a patient contribution, we do not look at such a contribution as a deterrent factor. Rather, we look at such a contributory payment by patients as a means of encouraging responsible use of prescribed drugs.

We conclude (a) that expenditures on prescribed drugs are a major factor in the health bill of the average Canadian and impose on many a

¹ Research and Statistics Division of the Department of National Health and Welfare, *op. cit.*, p. 164.

² *Ibid.*, p. 167.

³ *Ibid.*, p. 171.

⁴ *Ibid.*, p. 172.

⁵ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 138.

⁶ The Government of Manitoba, brief submitted to the Royal Commission on Health Services, Winnipeg, January 1962, p. 50.

burden that the individual cannot carry, and (b) that the average consumer of pharmaceuticals can without hardship contribute a reasonable amount for each prescription, special circumstances excepted, thus reducing the costs of a prepaid drug programme.¹

QUALITY OF DRUGS

The Food and Drug Directorate of the Department of National Health and Welfare is the primary government agency concerned with the quality of drugs in Canada. This agency administers the Food and Drugs Act. Contrary to what is often assumed, this Act does not provide for Government approval of any drug. The method employed is to make it an offence to do or not to do specific things. Any drug or medical device not violating the Act or regulations made thereunder may be sold. As a constitutional matter the Federal Government has jurisdiction in this field because of its responsibility for criminal law. The Food and Drug Directorate exists to detect those who commit offences, and to seek remedies. The usual remedies are prosecution of the company or seizure of the product which offends against the law. Seizure is thought to be the more effective of the two remedies.²

The Food and Drug Directorate does not guarantee that every drug marketed has been approved or found satisfactory in any way. However, because prevention of an offence is thought better than any remedy, the Directorate does advise manufacturers and others as to whether a new product, label, or advertisement is likely to be in violation of the Act.³ In these circumstances the manufacturer must continue to accept full responsibility for his product.

Before a manufacturer can put a new drug on the market he must comply with various regulations under the Food and Drugs Act. No one may sell a new drug to the public unless a notice of compliance has been issued by the Department in respect to such drugs and no such notice is issued unless a new drug submission including all the required information has been filed and found satisfactory. The information required includes a complete description of all experiments, tests, controls, and clinical trials necessary to establish the safety of the drug. Not only every new drug but every new preparation of it (i.e., by another supplier) must be cleared by the Food and Drug Directorate. This requires a new submission and a new

¹ See also Chapter 2, Recommendation 58.

² Restrictive Trade Practices Commission, *op. cit.*, p. 156.

³ *Ibid.*, pp. 160 and 161.

notice of compliance. Because the procedure may be long and expensive, this requirement may be a significant barrier to small manufacturers.¹ To indicate the importance of this particular responsibility, it may be noted that the Food and Drug Directorate in one year has reviewed as many as 180 new drug submissions, many of them containing several hundred pages of data.²

The provincial pharmacy acts supplement the Food and Drugs Act in providing for a listing of drugs which may be sold only on prescription.³ There are specific regulations under the Food and Drugs Act also, pertaining to the labelling of drugs, designed to inform the physician, the druggist and the public about their safe and proper use. Quality standards are established for some drugs in the regulations, and a schedule to the Act also contains a list of official compendia which set standards for other drugs.⁴ When a standard has been prescribed in the regulations, or in any of the compendia, the sale of drugs not conforming to this standard is prohibited. Among the basic qualities demanded by the law are that the drug must have the composition claimed for it, the medication must be contained in such a way as to be wholly available to the consumer of the drug, it must be free from harmful extraneous substances, and its potency must have certain stability.

The powers of inspection under the Food and Drugs Act are broad. Their use, however, is discretionary except that a minimum amount of inspection is required to be carried out in connection with certain matters. For example, no Schedule E drugs (which include organic arsenicals used in the treatment of syphilis) may be sold unless each batch is deemed "not unsafe for use".⁵ These drugs are less important than they once were having been replaced to some extent by antibiotics. The sale of injectable antibiotics is prohibited unless the premises, processes, and conditions of manufacture are such as to ensure that they are not unsafe for use. The Department issues a licence on a yearly basis after the procedures, premises, and records of the manufacturer have been subjected to critical examination.⁶ Schedule H contains the drugs Thalidomide and Lysergic Acid Diethylamide which may not be sold at all to the general public, and only to special groups of experts for investigational purposes. Most drugs are subject only to a general prohibition against manufacturing or storing under unsanitary conditions, and against selling drugs so manufactured or stored, or any adulterated drugs. The Food and Drug Directorate has authority to inspect at any level of distribution, including retail, but with its limited staff it pays most attention

¹ *Ibid.*, p. 165.

² The Canadian Pharmaceutical Association, Inc., *op. cit.*, Appendix D, p. 5.

³ Research and Statistics Division, Department of National Health and Welfare, *op. cit.*, p. 31.

⁴ The Canadian Pharmaceutical Association, Inc., *op. cit.*, Appendix D, p. 4.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 154.

⁶ The Canadian Pharmaceutical Association, Inc., *op. cit.*, Appendix D, p. 2.

to manufacturers of prepared dosage forms.¹ About 450 inspections of drug plants are carried out each year.

In addition to plant inspection, of course, a major programme of laboratory testing is carried on. In a three-year period ending in 1960, 11,290 samples of drugs were subjected by the Directorate to laboratory tests. Of these, 4,479 samples tested were for enforcement of the Opium and Narcotic Control Act. A significant portion of the time of the Food and Drug Directorate's drug analysts is therefore taken up in the administration of this Act. Of the remaining drug samples tested, 2,923 were vitamin, and vitamin and mineral preparations, 710 were depressants and stimulants, 394 were systemic disinfectants, 358 were analgesics, 314 were hormone and hormone-like substances, 227 were autonomic drugs, 135 were diuretics, 112 were anaesthetics and the rest were a miscellaneous group including cardiovascular agents, antihistamines, etc.² In his evidence before the Restrictive Trade Practices Commission, Dr. C. A. Morrell indicated that with respect to the laboratory tests made in 1960, 30 per cent of the pharmaceutical samples examined were unsatisfactory (for example, there might be a variation in potency but within tolerable limits), but only 5 per cent were objectionable to the point that they had to be withdrawn. It should, of course, be borne in mind that drug inspectors examine mainly those drugs which they have some reason to suspect.³

The function of the Opium and Narcotic Control Act is to provide for the domestic control of the legitimate trade in narcotic drugs, and in co-operation with the Department of Justice to suppress the illicit traffic in narcotics. Manufacture in Canada is prohibited but provision is made for handling by wholesalers under a licensing and audit system. A complete record is available of the source, distribution, and the legitimate sale of these drugs.⁴

Imported drugs are also inspected on a sampling basis. In those custom ports where there are no drug inspectors, the Food and Drug Directorate is notified by customs inspectors of shipments of drugs coming into the country. These shipments are held until a release is obtained from the Food and Drug Directorate. It is not necessary to seize imported drugs or to prosecute the supplier because entry of the drugs can simply be refused.⁵ In the past the Food and Drug Directorate has sent an inspector overseas, to Italy, for example, to look at various pharmaceutical manufacturers located there.⁶

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 155.

² The Canadian Pharmaceutical Association, Inc., *op. cit.*, Appendix D, p. 4.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 157.

⁴ Research and Statistics Division of the Department of National Health and Welfare, *op. cit.*, p. 26.

⁵ Restrictive Trade Practices Commission, *op. cit.*, pp. 162 and 163.

⁶ *Ibid.*, p. 155.

The Canadian Pharmaceutical Association told us that "the degree of quality control of drug products that is mandatory under present Regulations of the Food and Drugs Act is not such as to give sufficient assurance to the pharmacist that any given batch of the products of all manufacturers will meet the required specifications".¹ We were told by the Saskatchewan Pharmacists Association that pharmacists will not risk supplying generic drugs unless convinced of their purity and potency. Physicians were said to be similarly reluctant to prescribe generic drugs. The Association said that the situation was not likely to change until the Food and Drug Directorate "can give assurance that all drugs not only meet required standards but that the manufacturing care and techniques of every licensed manufacturer are adequate".² The New Brunswick Pharmaceutical Society expressed a similar view.³ On the other hand, the Canadian Pharmaceutical Manufacturers Association took the position that it would be virtually impossible for the Food and Drug Directorate to check every batch of drugs. A minimum of 76,000 batches of drugs are said to be placed on the Canadian market by major companies each year without including what is supplied by importers or small regional companies.⁴

There is no doubt that the problem is a difficult one. Available information indicates that savings by the purchase of drugs under their generic names have been realized chiefly by government or institutional buyers who purchase large quantities and who are able to test the quality of these drugs.⁵ There are, however, at least two hopeful elements in the situation. In his evidence before the Restrictive Trade Practices Commission, Dr. C. A. Morrell made some significant comments on one of them. He indicated that quality control requirements for any particular company depend upon the number of products being manufactured, and the danger or potency inherent in them. Companies making a limited line of products, none of which are of a dangerous character, have no need for the same quality control requirements as a large manufacturer with several hundred products, some of which will certainly be dangerous. Dr. Morrell further expressed the opinion that in order to adequately test and check drugs in Canada the Food and Drug Directorate would have to triple its staff of inspectors and laboratory personnel.⁶

The evidence given to the Restrictive Trade Practices Commission was that some foreign firms, as a matter of courtesy, allow the inspectors of the Food and Drug Directorate to visit their plants, but only with respect to

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 38.

² The Saskatchewan Pharmaceutical Association, *op. cit.*, p. 18.

³ New Brunswick Pharmaceutical Society, Final Submission, *op. cit.*, p. 10.

⁴ Canadian Pharmaceutical Manufacturers Association, *op. cit.*, p. 75.

⁵ Green Book, *op. cit.*, p. 222.

⁶ Restrictive Trade Practices Commission, *op. cit.*, pp. 156 and 157.

Schedule C and D drugs has the Directorate authority to inspect "the premises in which drugs are manufactured and the process and conditions of manufacture therein". The significance of this handicap in relation to foreign sources of supply is suggested by the evidence of Professor J. L. Summers of the University of Saskatchewan, who said "no knowledgeable person in the field of pharmacy could walk into a plant and spend a day with them and not learn more and know more about the quality of the product which they produce than analytically, by testing they could learn in five years".¹ There does not appear to be any obvious reason why inspection abroad, given adequate staff, should not be increased. Authority was provided in the Regulations under the Food and Drugs Act in March, 1963, for inspection of manufacturing facilities and control of drug manufacturing.

The Canadian Medical Association stressed that from the point of view of the medical profession the most urgent needs were:

- "a) to provide a means of assuring the doctor that his prescription does in fact contain the stated type and quantity of active drug even if the generic name is used and no manufacturer specified, and
- "b) to provide information on new drugs relating to an objective appraisal of their efficacy and toxicity by an unbiased body of experts before they are released for general use."²

The Canadian Medical Association recommended that:

"The responsibilities of the Food and Drug Directorate should be extended to provide quality control of all drugs offered for sale and authoritative information on new drugs."³

DRUG ADVISORY COMMITTEE

The problems touched upon in the previous section emphasize the importance of the role of the Food and Drug Directorate of the Department of National Health and Welfare and the Canadian Drug Advisory Committee. Among the responsibilities assumed by the latter organization which was formerly known as the Canadian Committee on Pharmacopoeial Standards is the appointment of subcommittees to advise the British Pharmacopoeia Commission on various subjects. One of these subcommittees deals with nomenclature.⁴ When a manufacturer presents a new drug submission for

¹ *Ibid.*, p. 494.

² The Canadian Medical Association, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 36, para. 100.

³ *Ibid.*, p. 100, para. 244.

⁴ Restrictive Trade Practices Commission, *op. cit.*, p. 15.

consideration by the Department of National Health and Welfare he is asked to supply a "proper name" for the product. The nomenclature sub-committee is important in avoiding conflicts with names in other jurisdictions. It may also help to see that a non-proprietary name is devised as quickly as possible after a drug has been made known to the medical profession, which is important, given the extent to which habit may determine whether a non-proprietary or brand name is likely to be used in prescribing.¹

The most important contribution which the Canadian Drug Advisory Committee can make to the objective of ensuring that the Canadian market is supplied with drugs of dependable quality was described by Dr. Mark Nickerson, Head of the Department of Pharmacology and Therapeutics at the University of Manitoba in his evidence before the Restrictive Trade Practices Commission:

"DR. NICKERSON: ... I think there is only one really satisfactory solution, and that is that we have to reach a position where any drug that goes on the market in Canada at least meets certain minimum specifications. The Canadian Drug Advisory Committee, of which I am a member, has drawn up with the Food and Drug Directorate a new set of regulations which involves recording the source of drugs, imported or not imported, and specific tests, and I think if the Food and Drug Directorate, if it did have adequate resources, or were given the adequate resources to carry this through, it would give reassurance that drugs on the market are up to standard, but I can see no real solution to the generic name promotional problem without having some basic assurance of these minimum specifications.'

'THE CHAIRMAN: With regard to the suggestions you made for variation in the methods followed by the Food and Drug branch, do you feel that these suggestions will assure reasonable accuracy of the drug available to the Canadian market?

'DR. NICKERSON: I feel that they will, or at least will go a long ways in this direction. The one thing I don't know about from my own personal experience is the extent to which the Food and Drug Director at the moment has the facilities to carry them out. This might possibly require more personnel.

'THE CHAIRMAN: Do you think you could say it would be quite impossible to undertake the thorough testing of every batch of drugs that comes out on the market?

'DR. NICKERSON: Yes. This is the reason the advertising [advisory] committee made the suggestion, that they will require analytical data, information of sources of raw material that went into the manufacture and provide also, when the Director feels necessary, for inspection of the facilities, and although it may still be a lot of work, I think it is more feasible to check records and analyses, and so on, than it is to do the actual testing of all drugs and so.'"²

¹ *Ibid.*, p. 492.

² *Ibid.*, pp. 172-173.

The Drug Advisory Committee referred to above is composed of representatives of the medical and pharmaceutical professions and the drug industry. We conclude that there is need to strengthen the arrangements for consultation between the Food and Drug Directorate of the Department of National Health and Welfare, and the health professions and the drug industry. In particular we believe that (a) representation should be broadened, (b) the area of responsibility should be extended to enable the Committee to assist the department more effectively in its work concerning the quality and efficacy of drugs, and (c) adequate staff and other needed resources should be provided.¹

PHARMACOPOEIA AND NATIONAL DRUG FORMULARY

The necessity for legal standards to define the specifications, establish the purity and regulate the strength of drugs is recognized by a number of countries. Such standards are set forth in "Pharmacopoeias" which contain lists of drugs with descriptive tests and formulae for preparing them. Many nations have national pharmacopoeias, e.g., in the United Kingdom, the British Pharmacopoeia—in the United States, the United States Pharmacopoeia—in France, the *Codex Medicamentarius Gallicus* (*Codex Français*)—in Germany, the *Deutsches Arzneibuch* (*Pharmacopoeia Germanica*), etc. Efforts have been made for a number of years to establish an International Pharmacopoeia. A start was made in Brussels in 1902 by the establishment of the International Conference for the Unification of Potent Remedies and the efforts were continued by the League of Nations and later by the World Health Organization by the establishment of an International Pharmacopoeial Committee which published the first volume of the International Pharmacopoeia in 1950 in three languages, English, French, and Spanish. A second volume was completed in 1955 and a supplement in 1959.

In Canada there is no national pharmacopoeia as such. However, authority is provided in the Food and Drugs Act to establish by regulation, standards of composition, strength, purity, potency, quality and other properties of drugs, and this has been done for a number of preparations. In addition, the British Pharmacopoeia, the United States Pharmacopoeia, the International Pharmacopoeia, and *Codex Français* have been recognized as official texts on drugs in a schedule to the Food and Drugs Act.

Besides a national pharmacopoeia, a number of countries have another standard work on drugs called a "Formulary" or a collection of

¹ See Chapter 2, Recommendation 61.

recipes, formulae and prescriptions. For example, in the United States there is the National Formulary supplementing the United States Pharmacopoeia in the promotion of standardization of the names and formulae of extensively used drugs not described in the United States Pharmacopoeia. In other countries the formulary type of text is termed a Codex, e.g., The British Pharmaceutical Codex. These standard compendia are recognized as official texts on drugs providing standards and tests of identity, purity and quality of drugs to ensure, as far as possible, uniformity in physical properties and active constituents. In addition, they standardize the names and formulae of extensively used drugs. As in the case of the Pharmacopoeia, a Schedule of the Food and Drugs Act recognizes the above texts as official standard compendia on drugs in Canada.

At the present time Canada is without any comprehensive national standard compendium on drugs. A number of years ago efforts were made to establish a national compendium on drugs in Canada under the title of The Canadian Formulary. This text was originally compiled and published in 1905 under the authority of the Ontario College of Pharmacy, and continued to be the property of that organization through five revisions until 1929 when the title was transferred to the Canadian Pharmaceutical Association. The last revision of the Canadian Formulary was undertaken by the Canadian Conference of Pharmaceutical Faculties for the Canadian Pharmaceutical Association, and the last edition (the seventh), published in 1949, consists of approximately 130 formulae of selected preparations. Many of the extemporaneous types of preparations included in previous revisions were omitted from the seventh revision. It is now out-of-date and rarely referred to as a standard work on drugs in Canada.

Evidently brand names may fulfil a useful function with respect to pharmaceutical compounds. Each active ingredient may have its own generic or chemical name, but there may be no non-proprietary name for the mixture itself. In such circumstances the mixture is more easily described by a single brand name, than by a list of all its active ingredients. The Restrictive Trade Practices Commission concluded, however, that brand names applying to single drugs and to the few "official" compounds that exist, although perhaps having considerable commercial value, from a medical and social point of view, are of doubtful value. We agree with the Commission's conclusions that brand names for such drugs increase the multiplicity of names and the risk of confusion; they tend to raise expenditures on advertising since most are individually promoted; and they tend to displace proper names and reduce competition by preventing the dispensing of other preparations of the same drug.¹

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 496.

The more general use of generic names to designate drugs is restricted by the fact that for a large proportion of them no such names exist or, in some cases, can be given. To illustrate, a survey was conducted in 1960 by Prescription Services Incorporated of Windsor which analysed 889 prescriptions which had been filled consecutively in two different time-periods. Of the total number of prescriptions 5 per cent were extemporaneously compounded; 7 per cent were filled using generic name products, and 88 per cent were written for brand-name products. The 88 per cent figure may be further broken down as follows: 42 per cent of the total number of prescriptions contained more than one medicinal ingredient; 28 per cent were single ingredients which could be procured under a generic or a brand name; 14 per cent were single ingredients for which no other brands were available; and 4 per cent were single ingredients which could be procured under more than one brand name.¹

Although the most impressive gains to a hospital from the use of a formulary system may derive from a listing of generic drugs, under such a system, of course, brand name drugs are listed also. Basically a hospital formulary is gathering together in a book descriptions of pharmaceuticals which reflect the clinical judgment of the medical staff. Under the formulary system in hospitals a medical staff member agrees that when he prescribes by a proprietary name the hospital pharmacist is authorized to dispense the same drug under its non-proprietary name or under a different brand name. A pharmacy and therapeutics committee, made up primarily of medical practitioners, studies and selects drugs which members consider are most useful for the treatment of the patients. In practice it is said to be essential that the consent of each person authorized to write a prescription be obtained prior to the introduction of a formulary system.²

Hospital formularies are widely used across Canada. This is indicated by a hospital pharmacy survey conducted by the Faculty of Pharmacy of the University of Toronto in 1957 which brought 314 replies from hospitals located in different parts of the country. Of this total 71 hospitals reported that they maintained an up-to-date formulary; 94 hospitals reported that they had a drug list which was kept current; 53 stated definitely that a formulary was not kept up-to-date; 29 indicated that a drug list was not kept current; and a number did not reply to this question.³

For the physician, the hospital formulary is an educational tool. An effective formulary lists the generic name of the drug and the comparable

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 39.

² Summers, Professor J. L., University of Saskatchewan, quoted by the Restrictive Trade Practices Commission, *op. cit.*, p. 472.

³ Canadian Society of Hospital Pharmacists, *op. cit.*, p. 24.

brand names. It also gives the physician information about the number of agents with similar therapeutic action which may be available in the hospital. It attempts to suggest good medications and to guide the physician in his choice of drugs. While the formulary system may restrict the physician in his choice of *brand*, it may therefore also assist him in choosing the brand. It does not in any event limit the availability or his choice of the *drug*.

Apart from its effect in improving health care, a hospital formulary is an economising device because it decreases duplication. This has the important result of reducing the inventory that has to be carried and permitting larger purchases of the same drug at one time. The impact of this has been described by the Canadian Pharmaceutical Association as follows:

"This system works to effect reduced costs to the hospital. From the manufacturer's point of view, the formulary system tends to substantially reduce, in hospitals and government institutions, or, indeed, eliminate the normal protection afforded his brand name. With sales made to hospitals under the tender system and the elimination of brand name protection, the manufacturer is forced into an extreme competitive field, price-wise, . . ."¹

We discuss later the rather large expenditures made by drug companies for purposes of product differentiation. The formulary system tends to undo the effect of this expenditure and one would expect that such expenditure would therefore be reduced.

A number of provinces have attempted to develop a drug formulary. In Saskatchewan, for example, regional hospital councils composed of a number of hospitals in a fairly well defined locality have established a pharmacy consulting service which provides for joint purchasing of drugs, and for the establishment of hospital formularies.² In addition the Saskatchewan College of Physicians and Surgeons has a pharmacy committee which in collaboration with the Department of Public Health regulates some of the drugs that are listed on the free list under the Medicare programme.³ In 1959 a hospital pharmacist was engaged by the Manitoba Hospital Services Plan to assist hospitals in improving purchasing practices and in the preparation of formularies. A survey conducted in Manitoba in 1961 revealed that less than 20 per cent of prescriptions under the medicare programme were written with the use of the formulary which is issued to medical practitioners. Recent trends indicate that physicians are using the medicare formulary to a greater extent. We were told that the Associated Hospitals of Manitoba have been

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 487.

² Saskatchewan Branch of the Canadian Society of Hospital Pharmacists, brief submitted to the Royal Commission on Health Services, Regina, January 1962, p. 8.

³ Transcript *op. cit.*, January 24, 1962, Vol. 19, p. 4453.

studying the possibility of adopting group purchasing methods, but that the success of this programme was thought to depend largely on the establishment of an acceptable formulary.¹

According to the Canadian Society of Hospital Pharmacists, "the most important determining factor in the decision of any hospital to prepare a hospital formulary is the length of time required for the production of same. The selection of the therapeutic agents to be included requires numerous meetings with the members of the Pharmacy and Therapeutics Committee. The preparation of a monograph for each drug requires many hours of research and checking on the part of the pharmacist plus considerable clerical work in the reproduction of this material in a form suitable for review by the Pharmacy and Therapeutics Committee and acceptance by the medical staff. If the book is to be printed, further delays are entailed in the rechecking and proofreading of the material. The formulary is therefore usually somewhat out of date before it is completed and immediate revision becomes necessary".²

In these circumstances, it is understandable that in their representations to us the Canadian Society of Hospital Pharmacists recommended that a "Canadian hospital formulary service, on a subscription basis, be established by pharmacists in Canada", with certain government assistance.³ We are informed that an American formulary service already exists under which an original formulary may be purchased for \$15 and which may be kept up-to-date with a subscription of \$5 per year. The Pharmacy and Therapeutics Committee of any hospital subscribing to the service may then select those monographs which they wish to have in their own formulary.

Given the fact that there are communities where a single hospital exists, operating on a formulary system, it is difficult to see that practising physicians would have serious objection to the use of a formulary outside the hospital when they do not object to such use inside the hospital. A national drug formulary was strongly endorsed by the Ontario Branch of the Canadian Society of Hospital Pharmacists who thought it would be "workable", "a wonderful guide . . . to the smaller hospitals in Ontario", and likely to reduce the cost of drugs and provide better patient care.⁴ We were told by the Canadian Pharmaceutical Association that it believes "that within this free-enterprise system a certain measure of necessary control can be introduced which will react against excessive duplication of drug products. Appreciable reduction of prescription inventories which, at the

¹ The Government of Manitoba, *op. cit.*, p. 49.

² Canadian Society of Hospital Pharmacists, *op. cit.*, p. 25.

³ Transcript, *op. cit.*, May 18, 1962, Vol. 56, p. 10718.

⁴ *Ibid.*, p. 10733.

same time, will maintain the physician's freedom to select the drug of choice and rely on the pharmacist's competence to supply it, can be expected to reflect economic advantages to the patient".¹

We conclude that it is essential for the orderly development of drug services as part of an over-all health care programme that Canada should have an adequate, comprehensive and up-to-date national drug formulary.²

DRUG INFORMATION SERVICE

As we mentioned earlier the Canadian Medical Association indicated that the most urgent need is the assurance to the medical profession that the quality of the drug prescribed is satisfactory.³ The Association expressed the opinion that facilities and qualified personnel were lacking to carry out adequate pre-marketing evaluation of new drugs at the clinical level. The Association recommended that the necessary authority and finances be provided for expansion of the work of the Food and Drug Directorate. It commented "it is our view that the proposed information service would command the ready cooperation of Canadian talent in pharmacy and pharmacology, in research and clinical investigation and in medicine".⁴

We discussed earlier the problem of ensuring that the Canadian market is supplied with drugs of dependable quality. With reference to the provision of information about efficacy and toxicity, the evidence before the Restrictive Trade Practices Commission is that medical practitioners generally have difficulty in keeping up with developments in the drug field.⁵ In this connection there appear to be two dangers. On the one hand physicians may accept promotional claims which have not been sufficiently established, and on the other a really effective agent may be overlooked in the mass of information which physicians presently receive. Evidence given to the Restrictive Trade Practices Commission indicates that the time required to keep up with the literature on new drugs also presents a problem to some pharmacists.⁶

A government-sponsored information service might be generally welcomed across the country. The Government of Manitoba, for example, recommended that "increased national services be provided for evaluating

¹ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 87.

² See also Chapter 2. Recommendation 62.

³ The Canadian Medical Association, *op. cit.*, p. 36.

⁴ *Ibid.*, p. 37.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 207.

⁶ *Ibid.*, p. 209.

the efficacy and quality of drugs and the distribution of information in this regard to medical practitioners, and pharmacists".¹ The Saskatchewan Pharmaceutical Association supported the idea of a government-sponsored monthly bulletin providing the latest authoritative information available on new drugs, and also the provision of an additional service under the same auspices which would answer specific questions at the request of any physician or pharmacist.² In their submission to us the Canadian Federation of Agriculture recommended the institution at government expense of such an information service.³ In their report the Restrictive Trade Practices Commission indicated that they had received many submissions which stressed the need for a publication which would make an objective and critical appraisal of new drugs, and which, it was suggested in most cases, should be government-sponsored.⁴

The favourable reaction of the drug manufacturing industry to these proposals is suggested by the following quotation from a statement by the representative of a leading drug company:

"...In this regard, we would be in favour of an official bulletin or other regular publication designed to acquaint doctors and hospitals and drug purchasing agencies with information on the latest developments in the drug industry. We feel that such a publication is, in fact, long overdue and we would be prepared to give active support to its publication. 'We have made some preliminary investigations along this line and we have received encouraging expressions of support from members of the medical profession and the industry itself. We feel that in order to be sufficiently authoritative, the publication would have to bear the stamp of approval of the medical profession, preferably of the Canadian Medical Association, as well as the government. In this regard the Food and Drug Directorate has already facilities at its disposal to enable it to contribute substantially to the formation of an organization to publish this type of review. We feel that the major ethical manufacturers would be more than happy to submit materials and results of clinical investigations to the publication. 'Should this step prove successful, this co-operative organization could possibly extend its activities to a wider field including the review of product claims, the establishment of improved standards of purity and quality, reports on clinical tests and other matters of interest to the industry.'"⁵

Such an information service is already operating in Britain. There the Ministry of Health, every two months, issues free to medical practitioners the Prescribers Journal, whose aim is to provide the physician with early and reliable information about new pharmaceutical products and the results of

¹ The Government of Manitoba, *op. cit.*, p. 49.

² Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4431.

³ The Canadian Federation of Agriculture, brief submitted to the Royal Commission on Health Services, Ottawa, March 1962, p. 10.

⁴ Restrictive Trade Practices Commission, *op. cit.*, p. 250.

⁵ *Ibid.*, pp. 250-251.

clinical trials. In an article commenting upon this service the Canadian Medical Association Journal has pointed to one inescapable problem: a journal either publishes quickly and risks inaccurate and perhaps misleading information, or it waits for a longer assessment and consequently publishes late.¹

In this discussion we have alluded so far to the effect of improvements in the dissemination of information about new drugs on improvements in health care. The possible effect on cost to the patient might be even more significant if the information service was able to provide medical practitioners generally with greater confidence in prescribing some at least of the lower cost drugs. In addition the development of an effective alternative method of disseminating information about new drugs might be expected to reduce the volume of expenditure on advertising and promotion presently undertaken by Canadian drug manufacturers. We consider this a desirable objective in the interest of reducing costs and prices of drugs.

We conclude that a periodic, current and reliable Drug Information Service would assist the medical and pharmaceutical professions to provide a more effective health service, and that over the long term such a service might contribute to reducing drug costs and prices.²

In this chapter we examined the special nature of drugs as a commodity with particular reference to prescribed drugs and the industry supplying them. We have more to say about the drug industry, and we do so in Chapter 16 where we deal with manufacturing, importation, distribution including advertising, foreign control of the industry and research and product development. Then, in Chapter 17 we deal with drug costs and prices, including patents, trade marks, tariffs and pricing practices. Our recommendations arising out of the conclusions stated in these three chapters will be found in Chapter 2.

¹ *Ibid.*, p. 256.

² See Chapter 2, Recommendation 62.

The Evolution of Health Insurance in Canada

BEGINNINGS

Prepayment of, or insurance against, the costs of medical services has a long history among Canadians. It may come as some surprise that the first known contract for medical insurance in North America was introduced almost 300 years ago. On March 3, 1665, in what is now the City of Montreal, a contract was signed between a master surgeon of Ville-Marie and 17 men and their families. The contract was apparently attractive for one month later six other family heads appeared before the notary and were blanketed into the contract. Several years later, there appeared the first "in-hospital" medical services contract. The parties to this contract were the Mother Superior of the Dames Religieuses Hospitalières and Jean Martinet de Fontblanche and Antoine Forestier, master surgeons, the latter promising and obliging themselves to "well and truly serve the hospital of Ville-Marie, to treat, dress and physic all the sick persons who may be there, and this for periods of three months each in turn and to visit such sick persons assiduously at about seven o'clock each morning and at such other hours as may be necessary, . . .".¹

Making allowances for the difference in knowledge and technology between then and now, it will be noted that the main essentials of typically good modern agreements appear in both contracts.

One of the earliest examples of an individual hospital making use of prepayment arrangements was St. Joseph's Hospital in Victoria, British Columbia. In 1878 the hospital announced benefits of "gratuitous admission, . . . visits of the doctor at reduced rates, and medicines free of charge," for a monthly subscription of one dollar.

For the modern period, the development began both east and west, and so far as the records indicate, almost simultaneously. As early as 1883 the minutes of meetings of the Nova Scotia Provincial Workers' Association in the Glace Bay colliery district reveal that employers made certain deduc-

¹ *Bulletin of the History of Medicine*, Vol. XXVIII, No. 6, Nov.-Dec., 1954.

tions from the wages of their employees, in the form of subscriptions for the services of doctors and for hospital care, even though it was not until 1903 that the practice of deducting from wages at source was legally sanctioned by the Nova Scotia legislature. The wage deductions were compulsory for all employees of the mining company, and were paid to the hospital of choice (there being two hospitals) and to the doctor of choice, on a capitation basis. This was apparently the earliest "check-off system" for medical services in Canada. In other mining and lumbering centres across Canada similar arrangements were adopted. Some of the more important have been the Hollinger Consolidated Gold Mines plan in Timmins, Ontario, the Consolidated Mining and Smelting Company contracts in Trail, B.C., and the plans for mining employees in Nanaimo, Chemainus, and Port Alberni, British Columbia. Typically, these arrangements were for employees and their dependents only.

On the Prairies, well before the turn of the century, the device of prepayment on a voluntary basis had come into use. The first publicly supported general hospital to be built in the Northwest Territories was the Medicine Hat General Hospital, established in 1889. Built through business contributions, voluntary fund-raising activities, and grants from the territorial government, the hospital developed as one of its sources of operating revenue a system of hospital insurance tickets under which the Board of Directors agreed to "lodge, board and give nurse and medical attendance" for a year, to anyone who purchased a "Five Dollar Ticket", for an annual period. Several hundred people took advantage of the scheme during the first year.

The idea of prepayment through the sale of hospital insurance "tickets" by the hospital itself was also being accepted in the East. One such enterprising hospital was the Hôtel Dieu in Chatham, New Brunswick. A copy of a letter from the Sister Superior, dated October 5, 1907, to the manager of a lumber camp indicates that because of the number of men treated in the hospital who "had either been injured in the woods or there contracted some malady" the Sisters had decided "this year to issue 'admission tickets' for our hospital". The tickets were put up in books of twenty and the price per ticket was \$3.00. The efforts of men in charge of camps and other business activities were solicited in the distribution and sale of these books. This, too, was a comprehensive coverage and included, "medicine, medical attendance, and board" at the Hôtel Dieu Hospital, "at any time during six months after date of this ticket".

Voluntary Health Insurance

These scattered examples, developed around the turn of the century, were clearly the forerunners of our present prepayment system. By 1934, a

survey by the Committee on Group Hospitalization of the Canadian Medical Association, revealed twenty-seven hospital-sponsored prepayment plans operating in six provinces. Two of these, Edmonton and Kingston, are of special interest. The Edmonton plan was known as "Edmonton Group Hospitalization" and all four Edmonton general hospitals participated. Coverage was limited to persons in groups at a premium rate of sixty cents per adult member per month. Benefits included standard ward care and special services at half-price. The programme continued until after World War II when it became the nucleus of the Alberta Blue Cross Plan.

The Kingston programme was initiated in 1933 and provided services in both the Kingston General Hospital, and the Hôtel Dieu. It operated on a different principle from that of the Edmonton plan, partial reimbursement of the patient's expenditures, the patient being entitled to a maximum of ten days in the semi-private ward or fifteen days in a public ward with a maximum for a family of fifteen days (or twenty days in a public ward). At the end of the year, all remaining funds in the plan were distributed to patients, each patient receiving the proportion of his expenditures that the balance in the fund represented to total patients' receipts. The total payments from the fund represented 60 per cent of the total of hospital charges billed to patients.

A programme following more closely the Edmonton plan had been launched by the St. Michael's General Hospital in Lethbridge, with the name "Voluntary and Provident Hospitalization Plan". Like the municipal plans in Alberta, it was based on a "dollar-a-day" payment by the patient and provided a fairly broad range of benefits for a premium of \$6.00 per year.

These represented the second stage of development of prepaid health services in Canada and from these experimental plans the Blue Cross movement was to flower. In the meantime, in various parts of Canada many other developments had taken place in the governmental sphere, revealing a growing interest in medical as well as hospital care.

*Public Health Insurance*¹

It is in the western provinces that we find first examples of people turning to the agency of government to solve their medical and hospital financing problems. And this should occasion no surprise, for in comparison with the East, the West suffered two disadvantages: the absence of large fortunes ruled out philanthropy as an adequate means of obtaining needed facilities or for meeting hospital deficits and sparse settlement made government the most efficacious machinery for solving such problems.

¹ For a description of the development of the direct provision of government medical and hospital services, as well as programmes for the indigent, see Chapter 8.

In all Canadian provinces, true to the Elizabethan Poor Law tradition, the burden of providing for the "sick poor" rested upon the municipalities. With this as a government responsibility, it was a natural development that wherever a church-related organization had not provided a hospital, government would find it necessary to undertake this responsibility as well.

In both Alberta and Saskatchewan, legislative provision was made for the combining of towns, villages and rural municipalities into hospital districts to establish a special local authority for the purpose of erecting and maintaining hospitals. In Saskatchewan the Union Hospital Act was passed in 1916 and over the years the Union Hospital system has steadily expanded. By 1920, there were ten Union Hospital districts: by 1930, there were twenty. Only three were established in the nineteen thirties. There are now 111 such districts in the province, covering more than half the population.¹

As a result, the Union Hospital is the predominant type of hospital within the province and the system has enabled rural areas that could have supported hospitals in no other way to erect and maintain the hospital facilities they required.

In 1917, the Union Hospital Act was broadened to enable the hospital board to arrange with any municipality for annual contributions for the hospital, be it by a fixed *per diem* rate for the patients in the hospital or by a fixed amount *in lieu of* or *in addition to*, such rate. From this responsibility to make payments to hospitals in behalf of indigent patients, it was a logical step for municipalities to pay the hospital bills for all their residents and collect the necessary revenue through the general land tax. No legislative authority for such municipal expenditures existed, but it appears that at least ten municipalities were providing prepaid hospital care to their residents in this manner before 1919. The first legislative authority for municipal hospital care insurance programmes was a special act, passed in co-operation with the Alberta Legislative Assembly, to enable the town of Lloydminster, which straddles the Alberta-Saskatchewan boundary, to provide money for "the maintenance and extension of the Lloydminster Union Hospital" and "for the payment of the expenses of their respective rate payers and residents when patients in the said hospital". By 1942, eighty-eight rural municipalities or parts of municipalities were operating municipal care plans.

Much more widely publicized than either the Union Hospital District system or the Municipal Hospital Care system, has been the Saskatchewan Municipal Doctor system. Ever since 1931, when the United States Com-

¹ Data obtained from the Department of National Health and Welfare.

mittee on the Costs of Medical Care published the monograph by Dr. Rufus Rorem on the Municipal Doctor system, the plan has elicited the attention of persons interested in medical economics. Dr. Rorem wrote when the system had been in operation for sixteen years, by which time fifty-two municipalities had contracts for the services of municipal doctors. In 1948, at the peak of its development, 107 municipalities, 59 villages, and 14 towns had contracts for either full- or part-time services with 180 doctors.

The Municipal Doctor system had its origin half a century ago in Saskatchewan. In 1914, the Rural Municipality of Sarnia was about to lose its physician, and, as an inducement for the doctor to stay, the Rural Municipal Council, without legislative authority, offered the doctor an annual retainer fee of \$1,500. In 1916, the Rural Municipality Act was amended by the provincial legislature to grant authority to rural municipal councils to levy taxes for this purpose. Following the war, rural areas continued to find it difficult to attract doctors, and in 1919, the Act was further revised to allow a municipality to pay a doctor a maximum salary of \$5,000 in return for which he was to provide a general practitioner's service. From 1919 to 1925, further amendments were made, extending such authority to villages and towns to enter into similar arrangements and to enable parts of municipalities or two or more municipalities to co-operate in engaging the services of a physician.

The terms of the contracts varied, but the majority required the provision of a general medical service including minor surgery, maternity care, and public health work including the inspection and immunization of school children. In certain instances, if the physician was qualified, major surgery was also provided at an additional cost. In 1939, a major change was introduced by the passage of the Municipal and Medical Hospital Services Act, permitting a municipality or a group of municipalities to provide medical or hospital services by levying either a land tax or a personal tax or a combination of the two, with the proviso that such annual tax was not to exceed \$50 per family. Municipal councils were thus enabled to obtain some contribution from non-property owners toward the cost of medical services which they received. As attested to by its consistent expansion in the number of persons in municipalities and doctors involved, it seems reasonable to state that within certain inherent limitations, and the special conditions of the rural west, the municipal doctor system was successful in meeting basic needs. Its chief advantage was that it provided a substantial inducement to a doctor to settle in a rural area in which, under the normal conditions of private practice, it would have been impossible for him to obtain an adequate income. Moreover, it provided for a new medical graduate a fairly sure means of rapidly establishing a practice and obtaining a definite income. None the less, the system had many shortcomings and,

in comparison with prepaid medical care obtainable in urban areas, left much to be desired. On the one hand, patients objected to the lack of free choice of doctor and to the restriction of benefits, in most cases, to the services of the general practitioner only. Doctors objected to the lack of right to select their patients, and to the fact that their tenure was, in some measure or at least in some instances, at the discretion of a municipal council. There have been certain objections to the amount of the salary paid and to the fact that many doctors felt a greater obligation always to be on call than they would under conditions of private practice.

In recent years the Municipal Doctor Plan began to be superseded in many municipalities by the "Community Contract" of the doctor-sponsored, Medical Services Incorporated plan, and was ultimately replaced by the Saskatchewan Medical Care Programme in July 1962.

The Municipal Doctor system has also been used in Manitoba and Alberta although not on the scale of Saskatchewan. The Health Survey Reports of those provinces indicated that, in 1950, there were eighteen municipal doctors in Manitoba and four in Alberta.

VOLUNTARY HEALTH INSURANCE IN CANADA

Reference having already been made to the beginnings, this section examines the four main categories into which voluntary insurance arrangements may be classified. There is, of course, some overlapping as we elaborate later on.

Voluntary Hospital Insurance (The Blue Cross Movement)

As indicated above, by 1934 there were in Canada 27 hospital-based prepayment plans operating in six provinces. There were also fraternal societies, lodges and mutual benefit societies that provided reimbursement of some part of the hospital bills of their members. It was in Winnipeg that the interest of the hospitals was combined with the interests of the community to develop the first approved "Blue Cross" plan in Canada. In 1937, under the sponsorship of the Central Council of Social Agencies, studies were commenced which ended with the passage of a special Act by the Manitoba Legislature in 1938. Enrolment began on January 1, 1939 and by 1941, 15,000 participants were insured. By the end of 1957, Manitoba Blue Cross had enrolled 403,000 participants, which was the highest proportion (46 per cent) of the available population of any Blue Cross plan in Canada.

With the initial success of the Manitoba plan, the Blue Cross movement in Canada gained momentum, with Ontario starting in 1941, Quebec in 1942, and the Maritimes and British Columbia plans in 1943. Alberta's pioneering "Edmonton Plan" was expanded into a Blue Cross Plan in 1948, and by 1958, Alberta Blue Cross had reached a total of 185,000 participants.

Some differences in the pattern of ownership and organization may be noted. The Manitoba plan was, as indicated, the creature of the Council of Social Agencies. Its Board membership of 21 indicated its broad community base, since seven represented the hospitals and the medical profession, and fourteen represented labour, business, rural municipalities, farmers and the public generally.

In Ontario the Blue Cross plan was the wholly-owned subsidiary of the Ontario Hospital Association. Unlike Manitoba Blue Cross however, which made herculean efforts to enrol rural subscribers, Ontario Blue Cross concentrated on commercial and industrial groups, leaving the rural population to the co-operatives. By December 1958, Blue Cross had enrolled 2,318,018 in its hospital care contract, which represented 39 per cent of the population of Ontario. Ontario Blue Cross was thus the sixth largest Blue Cross plan in North America.

The Quebec Blue Cross plan concentrated on urban enrolment in employee groups but resembled the Manitoba plan in its broad community backing. The British Columbia Blue Cross plan achieved an enrolment of 110,000 by the end of 1948, or about 15 per cent of the population. It is probable that its failure to achieve an enrolment proportionate to that of Manitoba and Ontario accounted, in part, for the introduction of the government-sponsored British Columbia Hospital Insurance Service on January 1, 1949, at which time the British Columbia Blue Cross plan ceased operations.

The Maritime Blue Cross plan emerged from the pioneering work of the previously mentioned Moncton plan, under the sponsorship of the Maritime Hospital Association. It operated under enabling legislation passed in Nova Scotia in 1943, in New Brunswick and Prince Edward Island in 1944, and under Newfoundland legislation passed in 1949. By the end of 1958, Maritime Blue Cross had achieved an enrolment of 332,000 participants.

Considering the modest beginnings of voluntary hospital insurance in Canada, and the limitations inherent in the voluntary approach,¹ the Blue Cross movement in Canada was extraordinarily successful. And there can

¹ See Chapter 18.

be no doubt of its contribution to the development of governmental policies respecting national hospital insurance in 1956 and 1957.

Voluntary Medical Care Insurance

Under this category, the profession-sponsored medical care plans operating in Canada are examined.

The first medical care plan introduced in Canada with Medical Association endorsement was the Toronto plan, Associated Medical Services, pioneered by Dr. J. A. Hannah, who received a grant of \$5,000 from the Ontario Medical Association and a similar grant from the Ontario Civil Service Association, which enabled him to begin enrolment of the first subscribers under a non-profit charter of the Companies Act of Ontario, April 1937.¹

More closely approaching the future pattern, however, was the plan launched on January 1, 1939, in Windsor, and sponsored by the Windsor Medical Society. The next such plan to be organized was Regina Medical Services, sponsored by the physicians in Regina in 1939.

In 1940, Medical Services Associated (British Columbia) became the first plan to serve as a province-wide model for the medical profession.

The other profession-sponsored plans in Canada were developed as follows:

Manitoba Medical Services, 1942

Medical Services Incorporated, Saskatoon, 1946

Physicians Services Incorporated, Ontario, 1947

Medical Services (Alberta) Incorporated, 1948

Maritime Medical Care Incorporated, Nova Scotia, 1948.

The chief characteristics of these plans are as follows:

- (1) They are sponsored by the medical profession and, with the single exception of the British Columbia plan, are controlled by the profession through majority representation in the boards of directors.
- (2) They provide *service* benefits, i.e., the patient receives the services and the doctor submits his bill directly to the plan. With certain exceptions, the patient is usually not involved in the payment of a fee.
- (3) In a sense, the members of the profession become "underwriters" since it has sometimes been necessary to "pro-rate" their fees whenever revenue was insufficient to meet the total of accounts received.

¹ Taylor, Malcolm G., *The Administration of Health Insurance in Canada*, Toronto: Oxford University Press, 1956, p. 43.

In addition to these programmes sponsored by the profession, three of the Blue Cross plans have provided medical benefits, and the first two mentioned continue to do so:

- (a) Quebec Blue Cross Plan
- (b) Maritime Blue Cross Plan
- (c) Ontario Blue Cross Plan

The provision of medical benefits by the Quebec and Maritime Blue Cross plans was approved by the respective provincial medical association but was opposed in Ontario. On January 1, 1959, Ontario Blue Cross gave its medical plan subscribers the option of transferring to Physicians' Services Incorporated.

The growth of the profession-sponsored plans is shown by these data for five-year intervals, covering both group and individual contracts for both comprehensive and limited contracts:¹

Year	Enrolment (000's)
1950	1,222
1955	2,890
1960	4,140
1961	4,848

Co-operative Plans

The distinction between the medical and hospital "co-ops" and the profession-sponsored plans is that under the co-ops, it is the consumers rather than the providers of service who control the organization. Reference has been made to some of the co-operatives in earlier sections. The history of the co-operatives has been one of great variety. Sometimes they have been sponsored by co-operatives formed for other purposes such as those under the Credit Union Medical Benefit Association in Ontario. In some cases, as in Regina, the co-operative plan and the profession-sponsored plan were combined to form one new plan. In Ontario the medical co-operatives are used as "collectors" for the Ontario Hospital Services Plan in the rural areas and the subscribers pay both premiums to the medical co-op.

At one time, Saskatchewan had a large number of medical co-operatives but these ran into serious financial difficulties and only one now remains. One co-operative medical plan is active in Quebec, the Service de Santé de

¹ Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2. (Excludes duplication of major medical supplementary category.)
Based on Health Insurance Association, *Survey of Voluntary Health Insurance in Canada, 1950-1960*.

Québec. At the end of 1961, 138,370 people in Canada were insured through co-operatives for medical, and hospital benefits; 55,563 having group and 82,807 having individual contracts, representing a marked decline in this type of insurance.¹

Commercial Insurance

Commercial insurance providing protection against medical and hospital costs is provided through two types of companies: (i) the life insurance companies and (ii) the casualty insurance companies offering sickness and accident insurance including hospital, medical and surgical expense benefits and, in certain companies, cash benefits for time lost due to sickness. In the main, the life insurance companies restrict their sales to groups of subscribers, whereas the casualty companies also have extensive coverage of individuals. The number of persons insured through commercial insurance has increased steadily over the years and by 1961, reached a total of 4,635,000 Canadians, with 4,130,000 covered under group policies and 505,000 covered by individual policies.

The first distinction between the nature of the insurance protection provided by commercial companies and the profession-sponsored plans is in the form of the benefits. The commercial companies provide an *indemnity* benefit rather than a service benefit, i.e., they undertake to pay the beneficiary a stipulated amount on the occurrence of a specified contingency such as a surgical operation, hospitalization, or attendance by a physician.

The second distinction is that carriers regard the function of medical insurance to be protection against expense which the insured would find difficult or impossible to meet himself. Accordingly, they have distinguished among medical and surgical care and in-hospital and out-of-hospital services, and offer a variety of plans which include only those services against which the insured wishes to be protected rather than offering primarily a standard, comprehensive policy, as the prepayment plans have tried to do. The insured has wide choice as to the degree of protection he may purchase for each type of contingency. The range of choice is much wider, of course, in the purchase of non-group than in group contracts, but even in group contracts the range of value of benefits available for selected standard procedures, from the highest benefit to the lowest, is between three and four hundred per cent.²

Although in the negotiation of group contracts, expert advice is likely to be available, the individual buyer must be regarded as not sufficiently knowledgeable in this area to make a wise selection among the many alternative "packages" offered him.

¹ *Ibid.*, Chapter 2, Table 2-1, and comments thereto.

² *Ibid.*, Chapter 3, Table 3-10.

The third difference is a philosophical one, although there are exceptions in practice. Generally speaking, the prepayment plans prefer to establish one premium schedule for all groups, regardless of their age or sex composition or their morbidity experience. The insurance industry, typically adopts the principle that an individual ought not to carry risks that are not his own and, in practice, rates the actual claims experience of each group, lowering the premiums for those with a low claims rate, and raising to adequate levels the premiums of those groups with high claims rates.

Since the prepayment plans are in competition with the insurance industry, in many cases they have lost large groups with low risk experience because of their adherence to a standard premium. Other prepayment plans have adopted the experience-rating device in order to meet this competition, although five of eleven plans report that they do not "experience rate" any group.¹ Their argument is that with experience-rating, individuals with unfavourable experience may be "unfairly" excluded or high cost groups "penalized". In short, the prepayment plans tend to follow the principles of social insurance rather than of commercial insurance.

The sale of insurance to individuals, with the possibility of an adverse selection of risks, has led, understandably, to underwriting techniques to protect the company against the hazards of such self-selection. The various techniques, which in the past two years appear to be more leniently applied, include health statements, medical examinations, waiting periods, exclusions, age limits, waivers, and carrier cancellation privileges.²

The only assurance that an individual has that his coverage will not be cancelled or specially rated, or that waivers of some benefit will not be required, is the non-cancellable guaranteed renewable contract. Of 58 non-group carriers reporting, 14 had such coverage available in 1961.³

A recent addition to the insurance protection offered by a number of insurance companies is the so-called "major medical expense" contract. These are of two kinds: (a) the "comprehensive" which is designed to provide full coverage for a complete range of health services, with a maximum, usually of \$5,000, for any one episode, and other financial limitations, and (b) the "supplementary", which usually has the same maximum, but is designed to supplement an existing standard medical and surgical expense contract.

In 1961, 6.6 million persons were reported having either comprehensive major medical expense contracts or having contracts providing surgical and medical coverage extending beyond simply in-hospital care.⁴

¹ *Ibid.*, Chapter 3.

² *Ibid.*, Chapter 3, Tables 3-13 to 3-18.

³ *Ibid.*, Chapter 3.

⁴ Excludes major medical supplementary.

The Commission's extensive survey of coverage at the end of 1961 (the latest year for which complete returns were available) indicates the numbers insured through commercial insurance companies, by type of coverage as shown in the following Table 10-1:

TABLE 10-1 NUMBER OF PERSONS INSURED BY COMMERCIAL INSURANCE, BY TYPE OF COVERAGE AND METHOD OF ENROLMENT, CANADA, 1961

Enrolment	Type of Coverage				
	Limited*	Compre- hensive**	Major Medical Compre- hensive	Major Medical Supple- mentary	Total†
	'000	'000	'000	'000	'000
Group Enrolment.....	1,292.3	1,059.8	1,778.5	963.7	4,130.6
Individual Enrolment....	235.9	209.9	60.1	1.6	505.9

*Limited includes surgical only, medical only, and surgical and medical in-hospital only.

**Comprehensive includes medical and surgical services in office, hospital or home.

†Excludes Major Medical supplementary.

SOURCE: Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2, Table 2-1.

Parallel to the development of voluntary plans and experiments, sometimes preceding and sometimes following, were various provincial experiments in the provision of health insurance, included both hospital and medical care insurance as well as prescription drugs. These experiments culminated in the development of public hospital insurance first in Saskatchewan and then in British Columbia. In Saskatchewan, a province in which no Blue Cross Plan had been organized, a Hospital Service Plan was introduced in 1947. In 1949, this was followed by the Hospital Insurance Service of British Columbia where Blue Cross had succeeded in enrolling only about 15 per cent of the population. Ultimately these developments led to the passage of the Hospital Insurance and Diagnostic Services Act in 1957 whereby both the federal and provincial governments participated in the provision of public hospital insurance. In the field of medical care insurance, Saskatchewan introduced a "medicare" programme in 1962 and this was followed by the Alberta Medical Plan in 1963. We now turn to a review of government activities in the health insurance field.

PUBLIC HEALTH INSURANCE IN CANADA

Although all provincial governments historically have become concerned with the economic problem of providing health care, particularly to people in need, it was in the western provinces that the health insurance issue became of major importance.

Health Insurance in British Columbia

No other legislative body in Canada has had the issue of health insurance before it so frequently and consistently over such a long period of time as has the Legislature of British Columbia. It is almost forty-five years since the first Royal Commission to investigate health insurance was appointed, a second commission was appointed thirty-five years ago, for the last twenty-five years there has been an inoperative health insurance law on the statutes, and 15 years ago British Columbia became the second province of Canada to launch a province-wide hospital services plan.

The first Commission was appointed on November 19, 1919 but no action was taken on its Report. In 1922 a member of the opposition proposed that a committee be appointed to bring in a Health Insurance Bill before the close of the session. Interestingly, Premier Oliver opposed this motion, pointing out that there was still a good deal of confusion as to whether the Dominion or the Provincial government was responsible for health insurance. Accordingly, the legislature passed a resolution that "this house urge upon the Government of Canada to give early consideration to legislation providing for an adequate system of insurance against sickness".

This resolution effectively limited the discussion of health insurance in the legislature until 1927. In that year, however, a new campaign began which was not to reach its climax until ten years later. Efforts in that session, in the 1928 session, and repeated in the 1929 session finally brought about the appointment in March 1929, of a British Columbia Royal Commission to report on the matter of health insurance. The Commission's Report was submitted in 1932. Its chief recommendation was compulsory health insurance for all employed persons in receipt of an annual income up to \$2,400 and voluntary admission to the scheme of other persons who wished to enter, with the system financed either wholly by contributions from employees or on a state-employer-aid basis. Benefits were to include medical services, drugs and appliances, hospitalization and at an early date, a dental benefit.

After lengthy discussions, a Health Insurance Commission was appointed and negotiations with the medical association begun. A draft

bill was finally completed and passed. Although the proposal was approved both in an election and in a special plebiscite, the issue proved to be more highly controversial than expected.

Because of strong opposition, it was stopped 9 days before it was to go into effect (February 9, 1937).

The next developments in medical care insurance in British Columbia were the introduction of the doctor-sponsored "M.S.A." in 1938, and the introduction of the provincial Hospital Insurance Programme in 1949, discussed below.

Health Insurance in Alberta

The first legislative inquiry in Alberta took place in 1928 with the report being submitted at the legislative session in 1929. While commending the municipal doctor system operating in some municipalities, the report felt that it would probably be better to improve public health services. The next move was a unanimous resolution of the legislature in 1932 calling for an investigation into state medicine. An interim report favourable to prepaid health insurance was submitted in 1932 and a final report in 1934. The 1934 report recommended the rapid expansion of public health services and grants to municipalities for municipal physicians as a first step and, as an ultimate step, the development of a province-wide health insurance plan to be administered on a decentralized basis using local health regions as the administrative units. Although the depressed economy obviously counselled slow development, the ultimate statement of the Commission was that "it is the opinion of your Commission that adequate medical services will never be available to all people of Alberta until income earners, through a system of compulsory contributions contribute a monthly sum sufficient to provide adequate medical services to all the people of the province". At the session of the legislature in the spring of 1935, a comprehensive health insurance bill was passed, but never promulgated. In 1944, Alberta introduced a programme of Maternity Hospital Care, financed wholly from provincial general revenues. In 1949, Alberta legislation provided for subsidy of municipal hospital care programmes.¹

Alberta has had four medical care insurance acts placed upon its statutes. One of these was passed in 1935, but not proclaimed. The second was passed in 1942, and the third in 1946. The 1946 Act did not come into effect and the 1942 Act was repealed in 1953. The present Act was proclaimed in 1963.

¹ See p. 409.

The present Alberta Medical Plan came into force in 1963 with an amendment to The Treatment Services Act which allowed the Minister of Health to:

"...enter into agreements with Medical Services (Alberta) Incorporated or any insurance corporation whose basic program of prepaid medical services or medical services insurance has been approved by the Government and the College of Physicians and Surgeons of the Province of Alberta to make available prepaid medical services or medical services insurance with comprehensive benefits to those eligible residents who desire it and need assistance to purchase the contracts provided by that corporation and to provide a specified dollar subsidy in respect of those residents who need assistance on the condition that the cost of the prepayment premium or insurance to those residents is reduced by the amount of the subsidy, . . .".¹

The Plan differs from all earlier proposals in that it is simply a system of government subsidy to those individuals who wish to be insured but whose incomes are determined to be so low as to make it difficult or impossible to pay the premium rates of the medical-sponsored prepayment plan or of commercial insurance companies.

Subsidies of two amounts have been established for two different income levels:

- (1) of the premium for those whose taxable incomes are below the income tax exemption level, and
- (2) of the premium for those whose incomes are so low that they have taxable income of less than \$500.

The maximum annual premium for the standard contract has been set at \$63.00 for individuals, \$126.00 for families of two and \$159.00 for families of three or more. This is the highest premium in Canada and compares with \$51.00 for individuals and \$138.00 for families for the most comprehensive plan in Canada, Manitoba Medical Services.² At the end of 1963, some 628,290 of Alberta's estimated population of 1,398,000 were insured.³

Health Insurance in Saskatchewan

Reference has been made to the development of the Union Hospital System and the Municipal Doctor System in Saskatchewan. Despite the rate of growth of these municipal plans, there was almost constant representation from the Saskatchewan Urban Municipalities Association and the

¹ Alberta Medical Plan, Bill 31, Amendment to The Treatment Services Act, 5th Session, 14th Legislature, Alberta, 11 Elizabeth II, Edmonton, Queen's Printer, 1963.

² The Manitoba Medical Services premium is for non-group contracts. The group plan is experience-rated and the premium is lower.

³ The Alberta plan became effective on October 1, 1963. On July 1, 609,000 persons registered for the plan. At the end of September 1963, M.S.A.I. was carrying 611,000 persons. Information obtained from Trans Canada Medical Plans.

Saskatchewan Association of Rural Municipalities to have the provincial government adopt a province-wide programme. These were especially strong during the 1930's when a substantial proportion of all physicians in Saskatchewan was in receipt of provincial government assistance. By 1942, the Saskatchewan Medical Association itself went on record as indicating that it was "in favour of state aided health insurance on a reasonable fee-for-service-rendered basis". Finally, in 1943, the provincial government established a Select Special Committee on Social Security and Health Services, which held public hearings. It indicated in its final report that representations before it had advocated two different methods of financing health services:

- (1) "A system of state medicine financed from taxation and in which members of the medical profession would be civil servants with their salaries paid by the state;"
- (2) "A system of health insurance financed by contributions, doctors being paid by fee-for-service, by capitation, or by salary."

The decision between these, said the Committee, would undoubtedly be made by the federal legislation then in the process of consideration by the House of Commons Select Committee. It advocated the establishment of a Commission whose duty it would be to introduce a health insurance programme as proposed by the federal government.

A bill was passed incorporating these recommendations and received Royal Assent on April 1, 1944, during the dying days of the last session of the Ninth Legislature.

This Act was not proclaimed but was replaced by a Health Services Act passed at the 1945 session, the major section of which provided for a comprehensive range of health services for recipients of public assistance. In 1946, the Hospitalization Act was passed, launching Canada's first provincially sponsored hospital insurance programme.¹

A beginning was made in 1948, with a public medical care service in the Swift Current Health Region. This plan was financed by a combination of personal and property taxes, supported by provincial government grants. While it continued to function in the Swift Current Health Region, the plan failed to win acceptance in other Health Regions of the province until it was superseded by the province-wide programme in 1962.

In 1960, the Saskatchewan Government appointed the Planning Committee on Medical Care representing professions, public and government. Following submission of its interim report in September, 1961, the Saskatchewan Medical Care Insurance Act was passed November 17, 1961, and scheduled to go into force on July 1, 1962. Because of disagreement

¹ See Chapter 10.

between the Medical Care Commission and the College of Physicians and Surgeons, the programme did not become fully operative until after the Saskatoon Agreement was reached on July 23, 1962.

The "Medicare" programme, as it is called, provides for a full range of medical and surgical services, both in and out of hospital. General administration is directed by the Medical Care Insurance Commission. Payment of premiums is compulsory, but individuals and family heads may elect to enrol, at a higher premium, through either of the physician-sponsored prepayment plans or an agency sponsored by a number of insurance companies. These three agencies receive accounts from physicians on behalf of their subscribers, forward them to the Medical Care Insurance Commission, are paid by the Commission, and, in turn, pay the physician.

For all other insured persons, accounts are sent directly to the Commission either by the physician for payment or by a patient for reimbursement.

A physician may, if he wishes, practise outside the programme, and receive payment only from patients directly who are then reimbursed by the Commission.

At the end of the first year's operations, this Commission was fortunate to obtain statistics on utilization and costs of the Saskatchewan experience. These have been analysed in a study prepared for us.¹

Health Insurance in Manitoba

Public debate over health insurance in Manitoba has never reached the proportions that it commanded in British Columbia, Alberta or Saskatchewan. As in other provinces, however, the problems faced by people in paying their hospital bills and by doctors in obtaining remuneration during the depression prompted establishment of a legislative committee in 1931 which presented its report to the session in 1932. It recommended simply that public health services should be extended, that assistance should be given to the municipal doctor plans and that a second commission should be appointed to investigate the feasibility of health insurance in the urban areas. The second commission was never appointed.

In 1945, as a result, in part no doubt, of the wide-spread publicity given to the House of Commons Hearings 1943 and 1944, the legislature passed the Health Services Act. It is interesting to note the priorities attached to the development of health services in that Act. The principles underlying the legislation were:

- (1) the establishment of a province-wide preventive health service based on full-time local health units;

¹ Berry, C. H., *op. cit.*

- (2) the establishment of diagnostic centres in hospitals both rural and urban and the provision of necessary diagnostic tests required by any patient free of charge;
- (3) the provision of a general practitioner's service on a prepaid basis;
- (4) the establishment of adequate hospital facilities and hospital insurance based on a province-wide system of hospital areas.

Beginning in 1946, Manitoba introduced free diagnostic out-patient services in a number of rural health units, but no other aspect of the programme was adopted until the national Hospital Insurance Programme in 1958, for which special legislation was passed.

Health Insurance in Ontario

In a survey of provincial government activity in the field of health insurance, one cannot help but note the existence of a geographic pattern of interest.

With but one exception, until as recently as 1955, action and, therefore, apparently, interest declined as one moved from the western provinces to eastward. Before 1955, the record of governmental interest in the provision of hospital and medical care insurance in Ontario is almost negligible. There had been no legislative committees, no royal commissions, and at no time was there any legislation on the statutes relating to health insurance for the general population.

However, in 1935, Ontario introduced a public medical care programme providing services of physicians in the home or in the office for recipients of public assistance and this, in fact, established a pattern which has been followed by the four western provinces and, in part, by Nova Scotia, in the provision of medical care for the indigent.

Ontario is more important for developments in the inter-war years in the field of voluntary medical and hospital care insurance, noted above. Currently however, there is a bill under consideration, respecting Medical Services Insurance, to make medical services insurance available to every resident and his dependents, without regard to age, physical or mental infirmity, financial means or occupation. Briefs are being presented to the Medical Services Insurance Enquiry.¹

Health Insurance in Quebec

Until recently, there was also very little interest in health insurance in the legislature of Quebec. In 1942, a Commission was appointed to inquire

¹ Bill 163, 4th Session, 26th Legislature, Ontario, 11-12 Elizabeth II, 1962-63, *An Act respecting Medical Services Insurance*, Toronto: Queen's Printer.

into the hospitals of the province and in its report it recommended introduction of universal health insurance, to be financed by a threefold contribution by the government, the employer, and the insured. In 1943, an Act to constitute a Health Insurance Commission was passed and it submitted its first report in 1944 on the subject "The Question of Nurseries and Child Protection".

With a change of government in 1945, the Health Insurance Commission was abolished.

Health Insurance in the Maritime Provinces

The Maritime Provinces complete the earlier picture of declining interest in governmental action in health insurance as one moves from West to East. There were important developments in voluntary insurance, as outlined above, but government action was concentrated in vigorous public health programmes and hospital construction.

Health Insurance in Newfoundland

Long before Newfoundland joined in Confederation, the province had entered into arrangements for part-time services of medical practitioners in certain areas. The Cottage Hospital and Medical Care Plan extended these arrangements to cover in-patient and out-patient hospital and medical care as well as domiciliary services by the physician. This plan which originated in 1935, was modified by the introduction in 1958 of the Hospital Insurance and Diagnostic Services Act. The same applies to the hospital plan for children under 16 years of age which began in 1957, and in the following year was extended to cover medical care in hospital.

Health Insurance and the Federal Government

The interest of the Federal Government in the issue of health insurance is a comparatively recent one, no thorough attention having been given before the 1940's. The issue has come, of course, before the attention of the House of Commons on a number of occasions.

The first recorded official action was taken in 1928 when a motion was adopted that the Standing Committee on Industrial and International Relations be authorized to investigate a report on insurance against unemployment, sickness, and disability.

The following year, the Committee presented a report and recommended that the Department of Pensions and National Health be requested to initiate a comprehensive survey of the field of public health with special reference to a national health programme. No further action was taken until 1935, when The Employment and Social Insurance Act, passed on June 28,

authorized the Administrative Commission established by the Act to assemble information concerning any scheme on a collective or co-operative basis by means of insurance or otherwise, for

- “(i) medical, dental and surgical care, including medicines, drugs, appliances, or hospitalization, or
- “(ii) compensation for loss of earnings arising out of ill-health, accident or disease”.

Under another section of the Act, the Commission was authorized “from time to time (to) submit to the Governor in Council proposals for co-operation by the Dominion in providing any of the benefits enumerated . . . for such action the Governor in Council is authorized to take, . . .”.¹ This Act was declared unconstitutional by the Supreme Court and the Privy Council in 1937.

The next action by the Federal Government in the field was incorporated as part of the work of the Royal Commission on Dominion-Provincial Relations which presented its Report in 1939. On the issue of health insurance, there is some doubt as to the precise intent of the Commission. It recommended that the provinces should accept responsibility for public health “field” activities, the provision of institutional care, and policy as to the method (e.g., whether by health insurance or by state medicine and state hospitalization) of providing state medical services (including dental, nursing, and hospitalization) for indigent or low-income groups. It suggested, however, “that the Dominion might be in a better position to collect the fees for health insurance, especially if there should be a Dominion scheme of compulsory unemployment insurance or contributory old-age pensions”.

Following this Report, the Minister of Pensions and National Health discussed the matter at the regular annual meeting of the Dominion Council of Health in 1941 and the “members expressed themselves as being sympathetic to the formulation of a plan of health insurance which would comprise preventive medicine and medical care”. The next step was the appointment of advisory committees to assist the Director of Public Health Services in the Department of Pensions and National Health to discuss and develop proposals for health insurance to be submitted to the Cabinet. The Canadian Medical Association appointed a committee which was not only instrumental in advising the Department officials, but which also had an influence in the announcement by the Canadian Medical Association of its policy regarding health insurance on January 19, 1943:

- (i) The Canadian Medical Association approves the adoption of the principle of health insurance;

¹ *Statutes of Canada*, 25-26 George V, Chapter 38, Part IV pp. 40 and 41, 1935.

- (ii) the Canadian Medical Association favours a plan of health insurance which will procure the development and provision of the highest standards of health services, preventive and curative, if such a plan be fair to the insured and to all those rendering the services.

In order to deal with the vast amount of material coming from 14 different advisory committees, the Minister appointed the Advisory Committee on Health Insurance. It was instructed "to study all factual data relating to health insurance and report thereon to the Minister of Pensions and National Health".

When the House of Commons met on January 28, 1943, the Government announced the appointment of a Select Committee on Social Security and to it was transmitted the Report of the Advisory Committee on Health Insurance.

To resolve the constitutional issue of provincial responsibility for health, the National Health Insurance Programme recommended by the Committee was to be achieved by the enactment of a Dominion Statute which would provide grants-in-aid to provinces enacting health insurance measures along the lines suggested in a model provincial bill. In addition to the insurance programme, the province would be required to agree to undertake a general public health programme approved by the Dominion Government and toward which a further grant-in-aid would also be given.

The benefits were most comprehensive, comprising prevention of disease including medical and nursing services, hospitalization, pharmaceutical and limited dental care. There was no provision for cash benefits. The bill also provided for a complex method of determining tax liability and the collection of the tax.¹

These proposals and the draft bills were then considered by the House of Commons Special Committee on Social Security. At no previous time in Canada's history had the question of health insurance elicited such response. A total of 117 witnesses representing 32 groups appeared before the Special Committee on Social Security and on July 23, 1943, following weeks of hearings, the Special Committee reported to the House of Commons that "the Committee approved the general principles of health insurance put forth in a health insurance bill respecting public health, health insurance, the prevention of disease and other matters related thereto".

Hearings were again held in 1944 and the draft bill was given additional scrutiny in the intervening period. As a result, a number of major changes were made in the proposal for the establishment of the health insurance fund.

¹ *Health Insurance*, Report of the Advisory Committee on Health Insurance Appointed by Order in Council P.C. 836 dated February 5, 1942, Ottawa: King's Printer, 1943, p. 3.

In order to obtain the views of provincial representatives on the revised proposals, a Conference of Dominion and Provincial Ministers and Deputy Ministers of Health was held in Ottawa in May, 1944.

The House of Commons Select Committee gave the bill further consideration, and on July 28, 1944, presented its Third Report to the House of Commons. It recommended that the bill be referred to a Dominion-Provincial Conference.

With the approach of the end of the war, the attention of the Canadian Government was directed to far reaching measures, of which health insurance was but one. Accordingly, the Federal Government called in August 1945 a Dominion-Provincial Conference on Reconstruction and to it submitted a wide range of proposals whose objectives should be "high and stable employment and income, and a greater sense of public responsibility for individual and economic security and welfare". The health insurance proposals had been substantially altered, the chief difference being the removal of most of the provisions of the draft bill to be passed by the provinces and the removal of the specific proposals for financing. The result was a much more flexible proposal for provincial acceptance.

The Canadian Government made four specific proposals:

- (1) A grant for planning and organization.
- (2) Proposals for health insurance.
 - (a) The provinces were to adopt health insurance in two stages. The first stage was to include a general practitioner service, hospital care, and a visiting nurse service. The second and later stages included other medical services (consultant, specialist, and surgical), other nursing services, (including private duty), dental care, pharmaceutical services, and laboratory services.

Among the most interesting changes was the proposal for federal financial sharing.

- (b) The Federal Government estimated that the total cost of all services would be \$21.60 *per capita*. It proposed to contribute to the cost of each benefit under the Health Insurance Plan as it was brought into effect in each province (i) a basic grant of one-fifth of the *estimated* cost of each service and (ii) one-half additional actual cost incurred by each province in providing each benefit up to a stated maximum which would reach \$12.96 per person when the complete programme was in operation. This meant, in effect, an offer of 60 per cent of the estimated cost of each service if the actual cost coincided with the estimate. If the actual cost exceeded the estimated cost which in

the post-war period of rising prices it was bound to do, then the federal contribution would have been less than 60 per cent.¹

(3) Public health grants.

These were health grants for specified public health purposes.

(4) Financial assistance for hospital construction in the form of low-interest loans to the provinces.

Because of the importance for the Commission's considerations of Dominion-Provincial relations, it might be worth while to stress here the changes in these proposals from those which had been so laboriously prepared in the first instance. These were:

- (1) Abandonment of the principle that the provinces could qualify for Federal assistance only by introduction of a comprehensive health insurance programme along the lines prescribed by the Federal Government, and acceptance instead of the principle that a province would qualify for federal assistance by introducing health insurance services by gradual stages.
- (2) An abandonment of participation by the Federal Government in the procedure of collection of contributions.
- (3) An abandonment by the Federal Government of its former prescription of details of administration as outlined in the suggested model bill. Provinces were to be completely free to decide the form of administration.
- (4) By removing the stipulation that the public health grants were to be conditional upon the acceptance by the province of a programme of health insurance, the Federal Government recognized its responsibility for a financial contribution for improved health standards without reference to the issue of whether a province must introduce a health insurance programme.
- (5) The proposal to make loans available for hospital construction was also an indication of recognition by the Federal Government of the inadequacy of the existing facilities to meet health needs once the economic barrier to effective demand for care should be removed.

These proposals were submitted to a Dominion-Provincial Conference which met in August 1945 and reconvened in April 1946. Unfortunately, the central theme of the Conference became not that of reconstruction so much

¹ For example, if the programme had gone into effect, say, in 1946, then Saskatchewan's Hospital Insurance Plan would have qualified in 1947. The Federal Government estimated cost of hospital care was \$6 per capita. Saskatchewan's actual cost was approximately \$9 per capita. The Federal Government contribution would have been 60 per cent of \$6, or \$3.60, and thus 40 per cent of the total.

as the financial arrangement concerning fields of taxation to be "rented" to the Federal Government in return for subventions to the provinces. Failure to arrive at agreement on these financial terms, therefore, precluded the adoption of any of the proposals of the Federal Government and, as a consequence, extensive action by the Federal Government in the field of health services was postponed until 1948 when the health grants programme was introduced.

NATIONAL HEALTH GRANTS PROGRAMME, 1948

Conditional grants-in-aid are a favoured device in federal systems. The philosophy underlying conditional grants-in-aid rests on two underpinnings:

- (1) The allocation of revenues in a federal system decided upon at the Constitution-forming period may be inadequate to finance activities as they expand under changing conditions. It is apparent in the Canadian system that the expansion of services under provincial jurisdiction—education, health, welfare, and highways, particularly—have exceeded the capacity of the provinces to finance them from their constitutionally assigned revenue sources.
- (2) Even if some provinces are able to undertake all of the services constitutionally assigned to them, there is a wide disparity among the respective abilities of the provinces to undertake all the services. The conditional grant-in-aid, therefore, is an attempt to overcome the inequities between provinces by enabling all of them to meet what is termed "a national minimum standard".

It is for this reason that some conditional grants programmes may contain formulas that compensate for these inequities. For example, 50 per cent of the tuberculosis control grant is apportioned among the provinces on a strict per capita basis and the other half is apportioned in accordance with the tuberculosis mortality rates. The grant for maternal and child health is also distributed one-half on the basis of population and the other half on the basis of maternal and infant mortality rates.

It will be recognized that these provisions in the formula take account of health needs, but not fiscal needs. In Canada, the conditional grants have traditionally not been concerned with the difference in fiscal needs. The equalizing function of federal assistance has been incorporated in the Tax Agreements.

In 1948 the Government decided that, notwithstanding the failure to obtain agreement on health insurance, it would be highly desirable to

introduce the health grants to provide firmer foundations on which the edifice of health insurance might later be erected. Accordingly, on May 14, 1948, the Government introduced the National Health Grants legislation.

There were some changes from the original proposals in 1945 and the following pattern emerged:

- (1) A health survey grant for the purpose of "assisting the provinces in setting up the machinery which would be necessary to insure the most effective use of the other health grants and in planning the extension of hospital accommodation and the proper organization of hospital and medical care insurance".
- (2) Grants-in-aid of existing programmes
 - (a) Public Health Grant \$8,097,000
 - (b) Tuberculosis Control 4,678,000
 - (c) Mental Health 7,405,000
 - (d) Venereal Disease 523,000 (a matching grant)
 - (e) Crippled Children 520,000
 - (f) Cancer 3,606,000 (a matching grant)
 - (g) Laboratory and Radiological
Services 6,546,000 (a matching grant
if used for services,
but a non-matching
grant for equipment
and personnel)
 - (h) Medical Rehabilitation 999,000
 - (i) Child and Maternal
Health. 1,916,000
- (3) A grant-in-aid of professional
training 623,000
- (4) A grant-in-aid of hospital
construction 17,918,000 (also a matching grant)

PUBLIC HOSPITAL INSURANCE

Maternity Hospital Care in Alberta, 1944

The first government-sponsored hospital care programme in Canada was the programme introduced by the Alberta government in 1944 offering "free" hospital care benefits up to a maximum of 12 days, for all expectant mothers and their new-born babies in Alberta, provided the mother

was a bona fide resident of the Province and had actually resided in the Province in twelve consecutive, of the preceding 24 months.¹ Benefits included all the services of the hospital at the standard ward level necessary for a maternity patient and the new-born infant for a maximum period of twelve days. Services could be received in approved hospitals and nursing homes or a cash grant could be paid to the mother whose baby was born at home. In the year following the programme, 96 per cent of all babies born in Alberta were delivered in hospitals. In 1958, the programme was integrated into the general hospital care programme.

Social Assistance Hospital Care in Saskatchewan, 1945

The second partial step to provide hospital services by a provincial government was the introduction in 1945 of a comprehensive programme of health services, including hospital, dental, medical, and pharmaceutical benefits for all persons in receipt of old age pensions, mothers allowances, and general relief. Approximately 30,000 citizens were thus entitled to free hospital care on presentation of their "insurance" card. The importance of this programme is indicated by the fact that in 1961, although those entitled to services represented only 4.5 per cent of the population, they received 13.4 per cent of all days of hospital care.

Saskatchewan Hospital Services Plan

It will be recalled that public interest in health insurance in Saskatchewan had resulted in 1943 in the establishment of the Select Committee of the Legislature under the Liberal Administration and that this interest had continued unabated.

A second Royal Commission was appointed in 1944. It recommended, among other things, the development of a programme of hospital insurance. Preliminary planning progressed through 1945 and 1946 in co-operation with the Saskatchewan Hospital Association, on the one hand, in arranging for the hospital benefits and with the Saskatchewan Association of Municipalities, on the other, in arranging for the tax collecting mechanism. The Saskatchewan Hospitalization Act was passed in 1946 and the plan began operation in 1947. It was modelled along the lines of a Blue Cross plan except that it was compulsory. The original premium schedule was \$5 a year for each member of the family to a maximum of \$30. The tax for the coming year was payable during the period September 1 to November 30 at any municipal office. Municipalities received a commission of 5 per cent for collection of the tax. The provincial govern-

¹ Department of National Health and Welfare, *Selected Public Hospital and Medical Plans in Canada*, Ottawa: Queen's Printer, July 1955.

ment continued payment into the hospitalization fund of equivalent amounts for each of three programmes that it had financed prior to the introduction of the plan, namely, hospital care for recipients of public assistance, hospital care for all cancer patients, and approximately \$1 million in the form of hospital per diem grants.

Since there had been no Blue Cross plan in Saskatchewan, it was necessary to work out policies and procedures that would be applicable in this new situation. The task was complicated by the fact that the bulk of the Saskatchewan hospitals was small, that there were serious personnel shortages, and that the population was widely scattered.

Among the new methods and procedures developed for the hospital plan were the following:

- (1) A system of municipal tax collection that, in view of all previous history with poll taxes, was remarkably efficient. Each year the hospital plan was able to have insured approximately 97 per cent of the total population.
- (2) The plan put into operation for the first year, the hospital payment system known as the "units of Credit" system proposed by the then Secretary of the Canadian Hospital Association, Dr. Harvey Agnew. Unfortunately, the plan was not as workable in practice as it was attractive in theory and had to be abandoned at the end of the first year. Eventually, the Saskatchewan Hospital Plan introduced the "fixed plus variable costs" formula for paying hospitals which has been adopted by British Columbia and Manitoba since.
- (3) Saskatchewan Hospital Services Plan brought its hospital consulting services to a high stage of expertise and the personnel in the hospitals standards division have been used very extensively by the hospitals in raising their standards.
- (4) The hospital services plan encouraged the development of a strong hospital association and recommended that hospitals include a higher fee for membership in the Saskatchewan Hospital Association in order to permit the establishment of a permanent hospital association secretariat.
- (5) The Saskatchewan plan was administered, from 1947 to 1950 by a Health Services Planning Commission, of which the Chairman was the only full-time commissioner. Two of the other four commissioners were Directors of Divisions with the Commission and the other two were the Deputy Minister of Health and the Deputy Provincial Treasurer. In 1950, administrative responsibility was transferred to the Department of Public Health assisted by the Health Services Planning Commission which was broadened to include five members.

of the public, five members from the health professions, and with a reduction from five to two in the membership representing the government.

The Saskatchewan Hospital Services Plan was faced, like all other prepayment plans, with rising costs and it became necessary in 1948 to supplement the premium system of revenue collecting with an increase in the sales tax. From 1936 to 1947, the retail sales tax had been 2 per cent. In 1948, the government raised the amount to 3 per cent and allocated the revenue from the 1 per cent increase to the Saskatchewan Hospital Services Plan.

The Saskatchewan Hospital Plan served as a testing ground for the solution of many problems associated with universal coverage and administration by a government body. In 1948, when British Columbia and Alberta were considering the introduction of their programmes, and again, from 1956 to 1960, when other provinces were preparing to accept the terms of the National Hospital Insurance Act, all the provinces sent delegations to study the Saskatchewan organization and procedures.

British Columbia Hospital Insurance Service

Although, as indicated earlier, British Columbia had a Blue Cross plan, it had not succeeded in enrolling a significant proportion of the population. Accordingly, in 1948, the British Columbia government introduced a Hospital Insurance Act, with the benefits very similar to those of the Saskatchewan plan but with a different system of taxation and tax collection.

Whereas the original premium structure of the Saskatchewan plan had increased the premium as the size of family increased, the British Columbia plan put a heavy premium on single persons, a reduced premium for the spouse in two-member families, and no increase whatever in the premium for any children in the family. The original tax was \$21 for a single person and \$33 for a family of two or more. Taxes were payable by payroll deduction if the employer volunteered to make deductions for this purpose. Only a small number of employers undertook the responsibility for this method. All other persons paid their tax through 61 district offices scattered throughout the province. At the end of the first year collections were 30 per cent below the anticipated revenue. It was decided to make payroll deduction compulsory and this did have the effect of increasing revenues substantially.

Dissatisfaction with the collection record and criticisms of the methods of administration led to the appointment of a Legislative Inquiry Committee and this Board proposed major changes. With some changes in the premium structure, and collection methods, there was some improve-

ment but, finally, on April 1, 1954, the premium system of tax collection was abolished and the Government announced an increase from 3 to 5 per cent in the retail sales tax, the additional revenues being obviously allocated to, but not specifically ear-marked for, the hospital insurance programme.

With the switch to sales tax financing, most of the problems that had faced the administration of the hospital plan disappeared. There still remained, of course, the problems of relationships between the hospital plan and the hospitals, which centred mainly on questions of meeting the costs of rising utilization and rising standards.

The British Columbia plan had been administered, from the beginning, by a single executive, called the Commissioner, responsible directly to the Minister of Health. In 1959, the title was changed to Deputy Minister of Hospital Insurance.

Alberta Hospital Services Plan

The Alberta Hospital Services Plan was launched in June 1949, and, unlike that of Saskatchewan, was based on the existing municipal hospital insurance programmes administered by municipal councils. The Saskatchewan and British Columbia hospital plans had included as benefits all of the required services of a hospital and had made no distinction between the basic services of room, board, basic nursing care, dressings etc., and what had come to be called in most hospitals (and in most of the Blue Cross programmes) the "special services" or "extras" of operating room, delivery room, drugs, anaesthesia, radiological and laboratory services. The Alberta proposal made the distinction used by Blue Cross plans and, in its original version the programme included only the basic benefits and not the "special services".

The financial proposal of the provincial government was to establish for each of five categories of hospitals a standard ward rate. It undertook to pay to the municipality of residence of the insured person one-half of that cost, with the municipality paying the balance of the cost from municipal tax sources.

In 1953, the Province authorized, at a municipality's option, the adding of the second tier of benefits to the basic plan to cover the costs of what became officially called "Special Services".

Another basic feature of the traditional municipal hospital plans was retained, that of the payment of a \$1 a day "deductible", by every patient for each day of care. When a municipality added the special services benefit, the deductible was increased to \$2 a day.

From 1949 to 1958, therefore, when the Alberta government accepted the terms and conditions of the National Hospital Insurance Act, hospital

care in Alberta was financed by a "tri-party" arrangement, namely, the province, the municipality, and the patient. By 1954, 75 per cent of all patients entering hospitals were insured through this programme.

Newfoundland Hospital Services Plan

In 1949, when Newfoundland joined Confederation, it brought with it a hospital services plan combined with a medical services plan that covered about one-third of the population living chiefly in the outports. The individuals who voluntarily paid a modest premium were insured for both medical and hospital care in government-owned hospitals. The rates in the hospitals for those not insured were high enough to induce most people to become insured. The plan was, of course, heavily subsidized by the provincial government. Nurses and doctors alike, were employed on salary by the Department of Public Health which administered the programme. In 1957, the Province instituted the Childrens' Hospital Plan providing free hospitalization and out-patient services for children under 16 years of age.

While these various provincial plans were developing, the grants-in-aid programme described above was being expanded.

Hospital Insurance and Diagnostic Services Act, 1957

A variety of factors contributed to the decision, in 1956, to proceed with a national hospital insurance programme. There were, first, the successful provincial programmes in British Columbia and Saskatchewan, the more limited but expanding provincial-municipal programme in Alberta, and the programme in Newfoundland. Equally important was the successful operation of the Blue Cross plans, demonstrating in the other provinces that, even though they could not reach all the population (in Ontario, Blue Cross insured 40 per cent of the population in 1956) they were sound in principle and effective in their operating methods. This evidence was supplemented by the wide-spread operations of the insurance industry in sickness and accident coverage.

Another factor was the gradual reduction of the hospital bed and personnel shortage which had previously been of concern to a number of political leaders, especially in Ottawa and Ontario. The Hospital Construction Grant and other health grants had, in fact, achieved many of the objectives set for them in 1948 in preparing the way for a broader programme.

Despite the achievements of the methods of voluntary prepayment and commercial insurance, the hard realities could not be overlooked: that demands on provincial governments and municipalities for increased hospital grants were large and persistent; that even in Ontario with the highest proportion of the population accessible through pay-roll deduction, that only

two-thirds of the population had any degree of insurance protection, and much of this was inadequate; that most of the rest of the population could not afford the rising hospital charges; and that hospitals were by and large in serious financial difficulty. Accordingly hospital insurance was one of the most important issues discussed at the 1955 Federal-Provincial Conference, and for the reasons mentioned above, it was concluded that a universal, comprehensive programme was essential if the hospital needs of the Canadian people and the needs of hospitals were to be met. This Conference was followed by successive meetings of Federal and Provincial Ministers of Finance and Health, as well as of technical experts, and by the end of 1956, the main details of the Act had been hammered out. The same close Federal-Provincial co-operation at the ministerial and technical levels continued during 1957 in the formulation of the regulations and the terms of the Agreements. By 1961, all provinces were parties to Agreements under the Act and 99 per cent of the population was insured.

Because this programme probably affects more Canadians, both in its results and its costs, than any other joint Federal-Provincial programme, and because any extension of Federal-Provincial co-operation in health services cannot but be influenced by its main principles, it is important that we examine here what those principles are:

- (1) It is a joint Federal-Provincial programme, that recognizes the constitutional position of the provinces and leaves responsibility for administration with them.
- (2) The ultimate costs of the programme, and therefore the federal share (50 per cent),¹ is determined by the hospitals and the provincial governments, through the costs authorized and the volume of services provided.
- (3) The services authorized as insured services under the Act are, by and large, all the in-patient and out-patient services normally provided at the standard ward level in an active treatment hospital, hospital for the convalescent, or a hospital for the chronically ill, but not in mental hospitals, tuberculosis sanatoria, or nursing homes. Perhaps the most significant new feature in regard to benefits introduced by the Act was the removal of any limitation on benefit-days. Hospital benefits are to be available as long as medically necessary.
- (4) The programme was based on the assumption of universal coverage of all citizens on uniform terms and conditions regardless of age, sex, physical or economic condition. It also facilitated portability of benefits from province to province. The Act states that the programme must be "universally available", but an examination of the records indicates that the intent was that the administrative and

¹ See Item (7) below.

financial arrangements should be such as to insure every resident of a province including recipients of public assistance. This objective was achieved automatically in all provinces using a system of financing other than premiums, and even in those using the premiums method, the proportion of insured persons has been extraordinarily high even where voluntary participation—at least in principle—obtains.

- (5) The Act assumes no change in the status of ownership of hospitals; moreover, it also assumes no change in the responsibility of management to direct and control the affairs of hospitals. (In the administration of the programmes in some provinces, we are not certain that this principle has been fully adhered to.)¹
- (6) The Act implies that services will be provided in the most economical way possible and by incorporating provisions for sharing of costs of out-patient as well as in-patient services.
- (7) The formula for federal cost sharing provides that the Federal Government will pay one-half the cost of approved services to insured persons in all Canada, but that the contribution to a specific province will be proportionately higher in low-cost provinces than in high-cost provinces. It is not, however, a formula calculated on fiscal need. It does provide an incentive for a province to keep its total costs below the national average. There is also explicit in the Act the principle that the Federal Government will not in this programme share in capital costs, interest on loans, or depreciation except on equipment.
- (8) The Act also rests on the principle that the legislation is not concerned solely with the “insurance” or financing mechanism; hence the requirement that each province indicate in its Agreement the means whereby it proposes to “license, inspect and supervise the standards of hospitals”. In fact, the Act is primarily a legislative enactment to enable people to obtain the services they require, and secondarily, a financial arrangement to assist in payment for those services.
- (9) Initially, it was decided that the Act would go into force when a majority of the provinces (6) having a majority of the population would conclude agreements providing for the introduction (or continuation) of programmes. However, following an Amendment the Act became operative on July 1, 1958, with only five provinces participating, although by January 1, 1959, seven provinces, by January

¹ See Chapter 14.

1, 1960, nine provinces and by January 1, 1961, all ten provinces were operating programmes. The Northwest Territories commenced their programme on April 1, 1960, and the Yukon, July 1, 1961.

The representations from hospital associations, medical associations, provincial governments, and consumer groups together with our own investigations, make it clear that, by and large, the basic foundations of the programme are sound, that it has financed hospital operations that could not otherwise have been possible, enabled people to obtain care that they would not otherwise have received, and prevented, for many individuals and families, a substantial part of the financially crippling blows of prolonged illness.

The programme appears to us a sound blend of federal financial support and respect for provincial responsibility. In fact, it goes beyond that, for in its administration it utilizes a number of joint Federal-Provincial committees and working parties. It is a remarkably successful example of what has long been termed "cooperative federalism".

How have the provinces organized their administration and financing? How have the provinces organized their programmes and financed their share of the costs? As in so many other aspects of Canadian public life, diversity is readily apparent.

With respect to the over-all insurance agency, some provinces have used the existing Health Department, some have set up separate agencies under the direction of a Deputy Minister, and others have used representative Commissions. Two have switched from one to the other. The present arrangements are as follows:

<i>Province</i>	<i>Administrative Agency or Authority</i>
Newfoundland	Deputy Minister of Health
Prince Edward Island	Hospital Services Commission
Nova Scotia	Hospital Services Commission
New Brunswick	Deputy Minister of Health (previously a Commission)
Quebec	Deputy Minister of Health
Ontario	Hospital Services Commission
Manitoba	Hospital Services Commission (previously a single commissioner)
Saskatchewan	Deputy Minister of Health
Alberta	Director of Hospitals
British Columbia	Deputy Minister of Hospital Insurance

As seen above, four provinces use the representative Commission and six place responsibility on a single head. All agencies are, of course, responsible to a minister, usually the Minister of Health.

With respect to financing, the experience again is varied, with some provinces having used different methods at different times and some using a combination.

The first province to introduce a programme, Saskatchewan, in 1947, started the pattern with the use of the premium method collected, in its case, by municipal authorities who were paid a commission for the extra work entailed. In 1950 the retail sales tax was increased from two per cent to three per cent and the revenue from the increase allocated to the Hospitalization Fund. In addition, a contribution from Provincial General Revenues was necessary. At present, the combination of premiums and sales tax is still used.

The second plan, introduced by British Columbia in 1949, followed the Saskatchewan pattern, but without the advantage of a similar municipal organization and with the disadvantage of a highly transient labour force especially in the lumber industry. Because of the resulting difficulties the premiums system was abandoned in 1952 and a simultaneous increase from three to five per cent in the retail sales tax augmented general revenues which remain the only provincial source of funds.

Alberta's programme began in 1949 with a system of grants-in-aid to municipal plans, the province's contribution coming from general revenues. Municipalities collected their share from property taxes and premiums from non-property owners. With the introduction of the federal programme, the programme is now provincially administered and financed. A small levy is imposed on municipalities for hospital construction, and municipalities are also responsible for any hospital deficits.

Manitoba and Ontario both finance their share largely from the revenues derived from premiums, collected by employers, municipal and other collectors, and by direct payment to the Commission.

Prince Edward Island and New Brunswick both financed their programmes, in the beginning, from premiums, but later abandoned the premiums method and now rely on provincial general revenues.

Nova Scotia has financed its share of the programme from the beginning with a 3 per cent retail sales tax specifically levied for this purpose.

The Quebec programme, introduced in 1961, is the largest of the programmes to be financed from provincial general revenues, although there had been a "hospital retail sales tax" before the programme began.

Newfoundland had long used a premium system but now finances its share from provincial general revenues.

The following outline summarizes the methods of financing the major provincial share of the cost of the hospital insurance programme.

Province	Premiums	Other Ear-Marked Tax	Provincial General Revenues	Other
Newfoundland			x	
Prince Edward Island			x	
Nova Scotia		Retail sales tax		
New Brunswick			x	
Quebec		Retail sales tax	x	
Ontario	x			
Manitoba	x	6% increase personal income tax—1% taxable corporation		
Saskatchewan	x	Retail sales tax		
Alberta			x	Per diem charge ¹
British Columbia		Retail sales tax	x	Per diem charge ²

¹ \$1.50-\$2.00 per day depending on the size of the hospital. \$1.00 per day charge for newborns.

² \$1.00 per day. No charge for newborns.

SOURCE: *Annual Report* of the Minister of National Health and Welfare, under the Hospital Insurance and Diagnostic Services Act, Ottawa: Queen's Printer, March 1963, p. 9.

But what of the hospitals? Here the problems are changing. Already we may be inclined to forget the problems of the collection department before the programme began and the limitations on budget or expansion imposed by the maximum charges that patients could reasonably be expected to pay. Now the thoughts are of the limitations of budget imposed by the hospital insurance agencies. It is our opinion—and we recognize it can not be proved—that, except perhaps for a relatively few highly endowed hospitals or those serving primarily upper income patients, hospitals across Canada are faring far better than they would have in the absence of the programme. There are indications of better service: for example, in Nova Scotia, total paid hours of work per patient day have increased from 12.4 in 1959 to 15.8 (the highest in Canada) in 1961. Nursing personnel hours per patient day in Ontario

increased in the same period from 6.5 to 6.9, while in Alberta they rose from 5.8 to 6.3. Hospital facilities have also expanded rapidly, as most provinces introduced new methods of capital financing.

The Annual Report of the Minister of National Health and Welfare under the Hospital Insurance and Diagnostic Services Act includes very detailed statistical information on the operation of the programme. However, certain of these data are of more general interest and importance and will be presented here.

Number of Insured Persons

Since the beginning of the programme in July, 1958, the number of insured persons has increased as a result of more provinces coming into the programme and the population increase in all provinces. In all but Ontario, coverage is either automatic (where financed from general revenues) or compulsory (where financed by premiums). Table 10-2 shows that even in Ontario, the proportion of eligible persons insured is 96.0 per cent; in Manitoba 95.2; and in Saskatchewan 97.7 per cent.

TABLE 10-2 NUMBER OF INSURED PERSONS ON MARCH 31, 1963, BY PROVINCE, AS REPORTED FOR PURPOSES OF ADVANCE PAYMENTS

Province	Number of Insured Persons March 31, 1963*	Estimated Population June 1, 1963**	Percentage of Persons Insured
Newfoundland.....	481,000	481,000	100
Prince Edward Island.....	105,000	107,000	98.1
Nova Scotia.....	733,000	756,000	99.6
New Brunswick.....	605,000	614,000	98.5
Quebec.....	5,465,000	5,468,000	99.9
Ontario.....	6,188,741	6,448,000	96.0
Manitoba.....	904,631	950,000	95.2
Saskatchewan.....	911,661	933,000	97.7
Alberta.....	1,398,000	1,405,000	99.5
British Columbia.....	1,687,000	1,695,000	99.5
Yukon.....	15,000	15,000	100
Northwest Territories.....	25,000	25,000	100
CANADA.....	18,519,033	18,897,000	98.0

* *Annual Report of the Minister of National Health and Welfare, under the Hospital Insurance and Diagnostic Services Act, March 1963, Table A, p. 12.*

**Dominion Bureau of Statistics, *Estimated Population by Sex and Age Group, for Canada and Provinces, 1963*, Ottawa: Queen's Printer, 1963.

Volume of Care

The volume of insured hospital days of care received by 17,741,000 insured Canadians in 1961 was 31,248,000 or an average of 1,761 days for each 1,000 insured persons.¹ The average was lower than in 1960 (1,808) a result of Quebec's entering on January 1, in 1961. This province experienced an average of 1,553 days per 1,000,² as shown in Table 10-3.

From Table 10-3, it will be noted that the average days of care per thousand vary greatly, from a low of 1,145 in Newfoundland and 1,478 in Nova Scotia to a high of 2,244 in Alberta and 2,246 in Saskatchewan. These two latter provinces have had their programmes in operation (by the year of these statistics, 1961) 12 and 14 years, respectively, and one cannot help ask if this is the long-run expectation in all provinces. A resident of Saskatchewan or Alberta receives almost twice as much hospital care as a resident of Newfoundland, almost 50 per cent more than a resident of Nova Scotia, and about one-fifth more than a resident of Ontario.

Both the Saskatchewan and Nova Scotia figures have remained fairly constant, as has British Columbia's, another plan with (by 1961) 12 years' experience, although its rate is only three-fourths that of Alberta and Saskatchewan. It will be noted that the highest rates of in-patient utilization are in those provinces not offering a full range of out-patient benefits. It is also worthy of note and cause for serious concern that these are among the highest known rates in the world. //

The impact of the insurance programme on patterns of responsibility for paying hospital bills is, of course, almost as complete as had been hoped. As Table 10-4 reveals, 87.8 per cent of all hospital days of care provided in Canada in 1961, were paid for through the insurance programme, and if the undistributed days, 1.7 per cent, are pro-rated, and the 1.3 per cent of days of care provided to non-residents are deducted, the proportion of insured patient days reaches approximately 90 per cent. Of the remaining 10 per cent, 6.3 per cent remain a federal responsibility, leaving not much more than 1 per cent as uninsured care for uninsured residents.

Hospital utilization is related to facilities available, and is calculated on the basis of the number of admissions and the average length of stay, which, in combination, give total days of care and rates per thousand population. Tables 10-4 and 10-5 show the wide variations among the various provinces.

¹ Table 14-1 refers to hospitalization rates for non-insured persons as well as insured.

² This is actually an understatement; 60 Quebec hospitals did not report plan days.

TABLE 10-3 INSURED PATIENT-DAYS DURING YEAR, WITHIN RESPECTIVE PROVINCES, AND RATES PER 1,000 INSURED POPULATION, ADULTS AND CHILDREN, BY PROVINCE, 1959-1961

Province	Number of Hospitals Reporting			Insured Population*			Insured Patient-Days During Year†			Insured Patient-Days per 1,000 Insured Population		
	1959	1960	1961	1959	1960	1961**	1959	1960	1961	1959	1960	1961
Newfoundland.....	40	40	42	448,000	457,000	468,833	528,852	524,656	536,918	1,180.5	1,148.0	1,145.2
Prince Edward Island.....	—	9	9	—	86,809	86,431	—	140,857	149,805	—	1,622.6	1,733.2
Nova Scotia.....	48	48	48	696,000	702,000	711,000	999,955	1,030,541	1,051,424	1,436.7	1,468.0	1,478.8
New Brunswick.....	—	38	40	—	522,255	604,000	—	929,674	976,537††	—	1,780.1	1,616.8
Quebec.....	—	235 ^a	235 ^a	—	—	5,202,167	—	—	8,077,091 ^a	—	—	1,552.6 ^a
Ontario.....	298	323	329	5,535,980	5,698,582	5,901,608	9,686,803	10,587,204	11,141,030 ^b	1,749.8	1,857.9	1,887.8
Manitoba.....	86	100	100	873,749	882,749	903,460	1,451,929	1,543,755	1,613,598 ^c	1,661.7	1,750.1	1,786.0
Saskatchewan.....	158	159	160	878,060	888,419	889,115	1,952,785	1,990,543	1,997,712	2,224.0	2,240.5	2,246.9
Alberta.....	117	121	162	1,232,000	1,272,000	1,312,083	2,360,000	2,540,354	2,944,358	1,915.6	1,997.1	2,244.0
British Columbia.....	104	112	108	1,556,000	1,594,000	1,625,750	2,434,785	2,595,285	2,707,098	1,564.8	1,628.2	1,665.1
Yukon.....	—	—	3	—	—	14,000	—	—	24,871	—	—	1,776.5
Northwest Territories.....	—	—	22	—	—	22,417	—	—	27,402	—	—	1,222.4
Total Provinces Participating Throughout Year	851	950	1,258	11,219,789	12,103,098	17,740,864	19,415,109	21,882,869	31,247,844	1,730.4	1,808.0	1,761.3
										Excluding Quebec		1,847.9

*Based on annual average number of insured persons under Provincial Plans, Health Insurance, Department of National Health and Welfare.

**Preliminary estimate.

†Provincial Plan responsibility days for hospitals located in the respective provinces, excluding out-of-province insured hospital care.

††Includes an estimated 35,000 days in Lancaster D.V.A. Hospital.

^aExcluding 60 Quebec hospitals not reporting Provincial Plan days.

^bIncludes an estimated 5,694 days in Lady Willingdon Indian Hospital.

^cIncludes an estimated 59,734 days in Deer Lodge Veterans Hospital.

SOURCE: *Annual Report of the Minister of National Health and Welfare*, under the Hospital Insurance and Diagnostic Services Act, Ottawa: Queen's Printer, March 31, 1963, Table A-1.

TABLE 10-4 PERCENTAGE DISTRIBUTION OF HOSPITAL-DAYS OF CARE, ADULTS AND CHILDREN, BY RESPONSIBILITY FOR PAYMENT, BY PROVINCE, 1961

Province	Provincial Plan	Insured Residents Care not Responsibility of Provincial Plan	Uninsured Residents of Province	Non-residents of Province	Workmen's Compensation Boards	Federal Government	Undistributed Days*	Total Patient-Days	Number of Hospitals Reporting
Newfoundland.....	92.0	3.5	—	0.6	1.8	2.1	—	100.0	42
Prince Edward Island.....	89.2	2.2	2.5	2.0	1.0	3.1	—	100.0	9
Nova Scotia.....	89.1	0.2	0.2	1.4	1.5	7.6	—	100.0	48
New Brunswick**.....	86.9	—	—	3.3	1.9	7.9	—	100.0	40
Quebec†.....	85.5	0.2	0.1	0.9	1.2	6.6	5.4	100.0	282
Ontario††.....	88.5	0.2	2.0	1.2	1.8	5.4	0.9	100.0	331
Manitoba ^a	86.9	1.6	0.1	3.1	1.2	7.1	—	100.0	100
Saskatchewan.....	93.8	—	0.9	1.6	1.3	2.4	—	100.0	160
Alberta ^b	91.5	0.1	0.1	1.7	1.7	4.9	—	100.0	162
British Columbia.....	83.4	1.4	0.3	0.8	2.3	11.8	—	100.0	108
Yukon.....	82.9	0.7	—	8.6	4.0	3.8	—	100.0	3
Northwest Territories.....	65.2	0.7	0.2	6.2	2.1	25.6	—	100.0	22
CANADA.....	87.8	0.4	0.9	1.3	1.6	6.3	1.7	100.0	1,307

*No information available on distribution by responsibility for payment.

**Includes an estimate of 35,000 Provincial Plan days, 85,000 federal days and 1,598 Workmen's Compensation days in Lancaster D.V.A. Hospital. Negative value for uninsured residents represents adjustment for previous year.

†12 hospitals did not report. Of 283 reporting hospitals 48 did not report distribution of patient days by responsibility for payment.

††Includes an estimate of 5,694 Provincial Plan days, 919 federal days, 413 uninsured resident days, and 22 non-resident days for Lady Willingdon Indian Hospital. The undistributed days represent non-Provincial Plan days in nursing homes.

^aIncludes an estimate of 59,734 Provincial Plan days, and 122,273 federal days in Deer Lodge Veterans Hospital.

^bIncludes 382,747 Provincial Plan days in nursing homes. No other nursing home days reported.

SOURCE: *Annual Report of the Minister of National Health and Welfare*, under the Hospital Insurance and Diagnostic Services Act, Ottawa: Queen's Printer, March 1963, Table A-2, pp. 72 and 73.

TABLE 10-5 TOTAL PATIENT-DAYS DURING YEAR, ADMISSIONS DURING YEAR, AND BEDS SET UP ON DECEMBER 31, PER 1,000 POPULATION, ADULTS AND CHILDREN, IN HOSPITALS LISTED IN HOSPITAL INSURANCE AGREEMENTS, BY PROVINCE, 1961

Province	Rate per 1,000 Population		
	Patient-days During Year	Admissions During Year	Beds and Cribs Set Up on December 31
Newfoundland.....	1,275.0	111.2	4.3
Prince Edward Island.....	1,604.6	155.1	6.2
Nova Scotia.....	1,600.4	148.3	5.6
New Brunswick.....	1,878.3	174.5	6.2
Quebec.....	1,795.2	138.0	6.1
Ontario.....	2,017.7	152.3	6.6
Manitoba.....	2,015.5	179.6	7.3
Saskatchewan.....	2,301.6	215.6	8.2
Alberta.....	2,414.6	196.4	8.5
British Columbia.....	1,992.5	175.4	6.6
Yukon.....	2,050.4	238.6	10.7
Northwest Territories.....	1,826.2	198.0	14.2
CANADA.....	1,951.9	157.7	6.6

SOURCE: *Annual Report* of the Minister of National Health and Welfare, under the Hospital Insurance and Diagnostic Services Act, Ottawa: Queen's Printer, March 1963, Table 4, p. 35

CONCLUDING SUMMARY

In this chapter, we have traced the developments of health insurance from its sporadic earliest beginnings, through payroll deduction plans in the collieries in Nova Scotia and the mines of Ontario and British Columbia on to hospital-sponsored prepayment plans, and into the modern period of comprehensive government-sponsored hospital programmes for the total population.

As examples of voluntary health insurance, we have cited the Blue Cross movement which was pioneered in Alberta and during the war years gained momentum in Manitoba, Quebec, the Maritimes, and British Columbia. In Ontario, by 1958, the Blue Cross, concentrating mainly on industrial and commercial groups, had enrolled 39 per cent of the population. Other categories of voluntary insurance were the medical care plans sponsored by professionals, such as Toronto's Associated Medical Services, the comprehensive Windsor Medical Services, and the Regina Medical Services. British Columbia was noteworthy for its plan on a provincial scale in 1940. Medical co-operatives, i.e., consumer-sponsored plans were also discussed.

Commercial insurance, both life and casualty, have been discussed, and contrasted with profession-sponsored plans in terms of benefits, service or indemnity, limited comprehensive, major medical, and in terms of experience-rating, waiting periods, waivers and carrier cancellation privileges.

Government or Public Health Insurance has been reviewed historically province by province. Municipal doctor services, wide-spread in Saskatchewan, were also used in Manitoba and Alberta as an inducement for doctors to settle in rural areas. British Columbia had a Royal Commission on Health Insurance as early as 1929, Alberta has had three medical insurance Acts on its statutes; Saskatchewan, at the urging of the Urban Municipalities Association and the Association of Rural Municipalities, and finally the Canadian Medical Association itself, established a committee on Social Security and Health Services which, in 1943, recommended a system of health insurance. Manitoba passed a Health Services Act in 1945. In the federal area, the events are reviewed leading up to the recommendation of the Haegerty Committee on Social Security, 1943, which approved the general principles of health insurance put forth in a Health Insurance Bill respecting public health, health insurance, the prevention of disease and other matters related thereto. Finally, the National Health Grants Programme of 1948 is described.

Public hospital insurance is likewise reviewed province by province, illustrating the pioneering programmes in British Columbia and Saskatchewan, as well as Alberta and Newfoundland. The 1955 Federal-Provincial Conference dealt with hospital insurance as an important issue and led to the formulation, in 1957, of a major breakthrough in Federal-Provincial health legislation, the Hospital Insurance and Diagnostic Services Act, under which by 1961, all ten provinces were operating programmes. The administrative and taxation arrangements for the programmes are cited as are the number of insured persons and the volume of care.

It is now a matter of record that the voluntary methods of insuring against illness or injury have contributed to safeguarding the health of Canadians in increasing numbers especially in the period following the Second World War; and that to date Canadians have, by and large, enjoyed a comparatively high level of medical care. In the matter of general hospital care we have now achieved a nearly universal programme for 99 per cent of the population, by a method of "cooperative federalism" which allows for provincial variations in implementation. This does not, however, mean that health services are universal or comprehensive. Half of our population still lacks adequate medical insurance. Moreover, medical and hospital care, being mainly curative and diagnostic, represent only part of the whole spectrum of health services.

Three provinces have shown initiative in public action. Saskatchewan has established an all-inclusive, compulsory plan which met with considerable reaction on the part of the medical profession. Alberta and Ontario have introduced legislation basically providing for voluntary coverage of certain medical services, with subsidies for specified categories of citizens to help with the payment of premiums. Nevertheless, the limitations of the Alberta and the Ontario plans, and the difficulties experienced in Saskatchewan, point out some problems of leaving health planning to the individual initiative and financial ability of each province. It becomes evident that a formula must be sought on a national scale, with Federal-Provincial agreement on programmes to ensure the provision and distribution of resources for the achievement of the best possible health care; preventive, diagnostic, curative and rehabilitational for all Canadians, regardless of age, income, or state of health. This is discussed in Chapter 18.

Cost of Health Services

RECORD OF HEALTH SPENDING

In Chapter 3 we have stated what we consider to be health services and in calculating the amount of money that Canadians spend on health we have prepared our estimates accordingly. Essentially we have concerned ourselves with the cost of providing personal health care, of undertaking health research and of educating health personnel; along with the provision of capital facilities required to support these activities.

Personal health care has been divided into two parts: the cost of services provided for individuals (whether the cost is borne individually or collectively), and public health services. Services provided for individuals consist of physicians' services, dentists' services, hospital services, the administrative costs of operating public and private prepayment plans, prescribed drugs and a category "other services" that includes the services of nurses rendered out of hospital and private duty nurses employed in hospitals, chiropractors, osteopaths, optometrists and the cost of prosthetic appliances and devices and hearing aids. The cost of dentures is included with dentists' services, and spectacles with optometrists' services. Public health services consist of services rendered by government agencies such as health planning and organization, environmental sanitation and the control of infectious disease but exclude, as far as possible, diagnostic and treatment services. Health research includes medical, dental, nursing and other health research. The costs of research in the development of ethical drugs is included in expenditures on these drugs. Education of health personnel covers the medical, dental and nursing professions.¹

Health Expenditures Defined

We recognize that in concentrating our attention on personal health care, certain expenditures have been excluded such as those for school milk or non-prescribed pharmaceuticals that may well affect health, and

¹ Education costs of these three groups are estimated to represent about 90 per cent of total educational costs of health personnel.

included expenditures such as institutional care for the mentally retarded or the senile aged that could be classified in part as educational or welfare expenditures. Such problems arise whatever classification method is adopted. The definition which we have chosen includes those services that were generally presented to us during our hearings as being an integral part of personal health care, and that have traditionally been regarded as such or in the case of newer services have become accepted as such by the health professions.

It has not been possible to obtain an estimate of the amount spent on some small sectors of specific health services. In such cases, expenditures have been included in a larger group called "other services". We have not included any estimate of the value of care provided free by physicians, dentists or other health practitioners, or at less than provincial fee schedules. Indeed given the difficulties that arise in obtaining reliable and meaningful data, estimates of expenditures on prescribed drugs are presented only for the years since 1945, public health services since 1947 and for education and research only for the past several years. All the estimates are subject to some margin of error that becomes greater the further back in time they go; but we are confident that the data include all significant health expenditures, and that the margin of error is not so great as to prevent us from illustrating the extent of the increasing amount of health care received by the average Canadian and the changing pattern of health expenditures over the past generation.

It should be clear that expenditures on health services are not, by any means, equivalent to the cost of illness or death. The cost of health services and facilities is no more than the market value of resources used in the prevention, diagnosis and treatment of illness or the rehabilitation of the disabled. The cost of illness also involves the lost production due to premature mortality and long-term disability along with the costs of pain and suffering for individuals that cannot be measured in monetary terms. Some of these costs will be examined in Chapter 12. Here we are concerned with the assessment of the costs of personal health care services over the past generation and of the major forces that have affected the level and composition of spending both for all health services and the individual health services. To this end we are presenting first a discussion of the importance of health services in the Canadian pattern of total spending, followed by a discussion of the behaviour of expenditures on individual health services.

Rising Health Expenditures

In the thirty-five years between the prosperous periods of the mid nineteen twenties to 1961, Canadians increased their spending on personal health services nearly tenfold. As shown in Table 11-1, and Chart A, expendi-

tures on all personal health services, excluding prescribed drugs, rose from \$166 million in 1926 to \$1,612 million in 1961; while if prescribed drugs are included the increase was from roughly \$175 million in 1926 to \$1,724 million in 1961. Similarly, as can be seen from Tables 11-4 and 11-6, expenditures on public health services rose from \$21 million in 1947 to \$105 million in 1961 so that the total cost of personal health care at the beginning of the nineteen sixties amounted to \$1,829 million. Table 11-7 shows that when capital expenditures, research and the cost of health education are included, Canadians spent \$2,019 million on all health items in 1961.¹

What have been the factors that lie behind this increase in health care spending? What forces of demand and supply have caused such a large increase in total spending? To answer these questions it is necessary first to observe what has happened to expenditures on other goods and services, to indicate the importance of health services in the total consumption pattern of the nation as well as the pattern of total production and to observe whether the trend in health expenditures differs significantly from expenditures on other goods and services. Then it is necessary to examine the significance of population growth, per capita consumption and the prices of health services since it is these factors that largely determine the level of spending. In the following sections we attempt to answer these questions and to assess the importance of the individual factors already mentioned.

Health Expenditures and Gross National Expenditure

Large as the sums spent on health undoubtedly are, as a proportion of all the goods and services that individuals and households buy (total personal expenditure on consumer goods and services), or of the total amount of goods and services produced in Canada (Gross National Expenditure or GNE), expenditures on health care have remained small. Excluding prescribed drugs, personal health expenditures, as shown in Table 11-1, rose from 3.2 per cent of GNE and 4.7 per cent of total personal spending in 1926 to 4.3 and 6.5 per cent respectively in 1961. Through most of this period, however, the relevant percentages have been in the neighbourhood of 3.0 and 4.5 per cent. When prescribed drugs and public health services are included in the cost of health services, Table 11-6 indicates that during the post-war period total expenditures were below 4 per cent of GNE up to 1958 and after that date remained below 5 per cent. In short, as their incomes have continued to grow, Canadians have purchased not only more health services but more of most other goods and services as well.

¹ Including non-prescribed drugs and pharmaceuticals, total expenditures amounted to \$2,229 million.

TABLE 11-1 EXPENDITURES ON PERSONAL HEALTH SERVICES BY TYPE OF EXPENDITURE AND PERCENTAGE OF GROSS NATIONAL EXPENDITURE (GNE) AND TOTAL PERSONAL EXPENDITURES SPENT ON PERSONAL HEALTH SERVICES, CANADA, 1926-1961

Year	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Admin. Cost of Health Insurance	All Services	Percentage of Total Personal Expenditures	Percentage of GNE	Prescribed Drugs	Total Expenditures	Percentage of Total Personal Expenditures	Percentage of GNE
	\$ '000,000								\$ '000,000			
1926	64.6	19.5	52.0	27.0	3.1	166.2	4.67	3.23				
1927	69.2	20.8	54.0	27.0	3.4	174.4	4.47	3.14				
1928	74.1	22.3	56.0	31.0	3.5	186.9	4.32	3.09				
1929	77.5	23.3	57.0	32.0	3.4	193.2	4.17	3.15				
1930	71.1	21.4	58.0	28.0	3.5	182.0	4.16	3.18				
1931	63.6	19.1	58.0	26.0	2.9	169.6	4.47	3.61				
1932	45.9	13.8	55.0	19.0	2.3	136.0	4.24	3.55				
1933	37.9	11.4	55.3	17.0	2.4	124.0	4.14	3.53				
1934	36.7	11.1	61.3	16.0	2.6	127.7	4.00	3.21				
1935	43.8	13.2	68.1	19.0	2.8	146.9	4.38	3.40				
1936	44.5	13.4	75.5	20.0	3.2	156.6	4.39	3.37				
1937	50.1	15.1	76.0	21.0	3.6	165.8	4.25	3.15				
1938	54.8	16.7	81.4	21.0	3.9	177.8	4.54	3.37				
1939	57.1	17.6	79.3	19.0	4.1	177.1	4.42	3.14				
1940	62.8	19.0	89.7	23.0	4.3	198.8	4.41	2.95				
1941	66.7	21.9	89.2	24.0	4.9	206.7	4.03	2.48				
1942	68.9	21.2	93.1	24.0	5.5	212.7	3.84	2.06				
1943	68.6	23.1	102.2	22.0	5.4	221.3	3.79	2.00				
1944	66.0	25.5	115.3	23.0	7.5	237.3	3.76	2.00				
1945	76.2	29.5	129.5	25.0	9.5	269.7	3.85	2.28	23.2	292.9	4.18	2.47
1946	86.7	36.3	150.7	28.0	12.6	314.3	3.89	2.65	26.8	341.1	4.22	2.88
1947	91.0	38.8	186.7	34.0	15.2	365.7	4.00	2.78	28.9	394.6	4.31	3.00
1948	101.4	40.0	215.0	36.0	18.0	410.4	4.04	2.71	32.4	442.4	4.36	2.93
1949	117.0	43.0	247.1	37.5	20.3	464.9	4.23	2.84	34.6	499.5	4.54	3.06
1950	135.0	46.5	283.3	39.5	23.0	527.3	4.35	2.93	37.8	565.1	4.66	3.14
1951	153.0	51.0	326.4	41.5	25.1	597.0	4.40	2.82	42.9	639.9	4.72	3.02
1952	168.0	56.0	356.5	43.0	28.9	652.4	4.39	2.72	46.2	698.6	4.70	2.91
1953	176.6	60.5	404.0	45.0	32.1	718.2	4.58	2.87	48.8	767.0	4.84	3.07
1954	188.6	66.4	446.8	50.0	35.7	787.5	4.84	3.17	52.1	839.6	5.16	3.38
1955	206.5	68.6	480.0	55.0	39.8	849.9	4.86	3.13	59.5	909.4	5.19	3.35

TABLE 11-1 EXPENDITURES ON PERSONAL HEALTH SERVICES BY TYPE OF EXPENDITURE AND PERCENTAGE OF GROSS NATIONAL EXPENDITURE (GNE) AND TOTAL PERSONAL EXPENDITURES SPENT ON PERSONAL HEALTH SERVICES, CANADA, 1926-1961—Concluded

Year	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Admin. Cost of Health Insurance	All Services	Percentage of Total Personal Expenditures	Percentage of GNE	Prescribed Drugs	Total Expenditures	Percentage of Total Personal Expenditures	Percentage of GNE
	\$ '000,000								\$ '000,000			
1956	240.1	81.5	529.8	65.0	40.1	956.5	5.05	3.13	71.8	1,028.3	5.43	3.36
1957	269.2	87.3	586.7	70.0	44.9	1,058.1	5.24	3.31	84.5	1,142.6	5.66	3.58
1958	295.5	98.1	640.1	85.0	50.4	1,169.1	5.48	3.55	90.3	1,259.4	5.88	3.83
1959	326.8	100.1	734.1	95.0	63.1	1,319.1	5.81	3.78	100.5	1,419.6	6.28	4.07
1960	354.5	112.4	826.7	105.0	65.8	1,464.4	6.20	4.04	107.5	1,571.7	6.65	4.34
1961	383.2	118.8	923.8	115.0	71.6	1,612.4	6.55	4.31	111.5	1,723.9	7.00	4.61

- NOTES: 1. Physicians' services include all services rendered by physicians in private practice as well as personal health services rendered by public and privately employed salaried physicians. Personal medical services rendered by salaried physicians in hospitals are included in hospital expenditures. Includes cost of prescribed drugs sold by physicians.
2. Dentists' services include all services rendered by dentists in private practice as well as personal health services rendered by salaried dentists.
3. Hospital services include all services rendered in public and private, acute, chronic, convalescent, mental and tuberculosis hospitals. Hospital services rendered in National Defence hospitals are excluded. Includes expenditures on prescribed drugs distributed by hospitals. Expenditures are gross operating expenditures of all hospitals.
4. Other services include services rendered by private duty nurses and nurses employed outside of hospitals by non-governmental agencies, chiropractors, osteopaths, and appliances.
5. Administrative costs of Health Insurance include administrative costs of public and private hospital and medical insurance programmes. Excludes administrative costs of accident and sickness insurance but include premiums returned, dividends credited to policy owners and increases in unearned reserves and advance premium accounts.
6. Personal expenditures include personal expenditures on consumer goods and services as classified by the National Accounts plus the cost of hospital care incurred by governments on behalf of individuals in mental, tuberculosis and federal hospitals and the administrative costs of public health insurance programmes.
7. Prescribed drugs includes all pharmaceuticals purchased on a physician's prescription from retail outlets, excludes drugs prescribed in hospitals, institutions other than hospitals, e.g., homes for the aged.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964; Department of National Health and Welfare, *Expenditures on Personal Health Care in Canada, 1953-61*, Ottawa, March 1963. Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1926-1961*, and supplementary data.

TABLE 11-2 PER CAPITA EXPENDITURES ON PERSONAL HEALTH SERVICES BY TYPE OF EXPENDITURE AND PERCENTAGE OF GNE, CANADA, 1926-1961

Year	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Admin. Cost of Health Insurance	All Services*	Percentage of Per Capita GNE	Prescribed Drugs	Total Expenditures	Percentage of Per Capita GNE
	dollars							dollars		
1926	6.84	2.06	5.50	2.85	.34	17.59	3.23			
1927	7.18	2.16	5.60	2.80	.35	18.10	3.14			
1928	7.53	2.27	5.69	3.15	.36	19.00	3.09			
1929	7.73	2.32	5.68	3.19	.34	19.26	3.15			
1930	6.97	2.10	5.68	2.74	.34	17.83	3.18			
1931	6.13	1.84	5.59	2.51	.28	16.35	3.61			
1932	4.37	1.31	5.23	1.81	.22	12.94	3.55			
1933	3.56	1.07	5.20	1.60	.23	11.66	3.53			
1934	3.42	1.03	5.71	1.49	.24	11.89	3.21			
1935	4.04	1.22	6.28	1.75	.26	13.55	3.40			
1936	4.06	1.22	6.89	1.83	.29	14.30	3.37			
1937	4.54	1.37	6.88	1.90	.33	15.01	3.15			
1938	4.91	1.50	7.30	1.88	.35	15.94	3.37			
1939	5.07	1.56	7.04	1.69	.36	15.72	3.14			
1940	5.52	1.67	7.88	2.02	.38	17.47	2.95			
1941	5.80	1.90	7.75	2.09	.43	17.96	2.48			
1942	5.91	1.82	7.99	2.06	.47	18.25	2.06			
1943	5.82	1.96	8.66	1.87	.46	18.76	2.00			
1944	5.52	2.13	9.65	1.93	.63	19.86	2.00			
1945	6.31	2.44	10.73	2.07	.79	22.34	2.28	1.92	24.26	2.47
1946	7.05	2.95	12.26	2.28	1.03	25.57	2.65	2.18	27.75	2.88
1947	7.25	3.09	14.88	2.71	1.21	29.14	2.78	2.30	31.44	3.00
1948	7.91	3.12	16.77	2.81	1.40	32.00	2.71	2.53	34.50	2.93
1949	8.70	3.20	18.38	2.79	1.51	34.57	2.84	2.57	37.15	3.06
1950	9.85	3.39	20.66	2.88	1.68	38.46	2.93	2.76	41.21	3.14
1951	10.92	3.64	23.30	2.96	1.79	42.62	2.82	3.06	45.68	3.02
1952	11.62	3.87	24.66	2.97	2.00	45.12	2.72	3.20	48.32	2.91
1953	11.90	4.08	27.21	3.03	2.16	48.38	2.87	3.29	51.67	3.07
1954	12.34	4.34	29.23	3.27	2.34	51.51	3.17	3.41	54.92	3.38
1955	13.15	4.37	30.58	3.50	2.54	54.14	3.13	3.79	57.93	3.35
1956	14.93	5.07	32.95	4.04	2.49	59.48	3.13	4.46	63.94	3.36
1957	16.21	5.26	35.32	4.21	2.70	63.70	3.31	5.09	68.79	3.58
1958	17.30	5.74	37.48	4.98	2.95	68.45	3.55	5.29	73.74	3.83
1959	18.69	5.73	41.99	5.43	3.61	75.45	3.78	5.75	81.20	4.07
1960	19.84	6.29	46.26	5.88	3.68	81.95	4.04	6.02	87.95	4.34
1961	21.01	6.51	50.65	6.31	3.93	88.41	4.31	6.11	94.52	4.61

*Columns may not add up due to rounding.

SOURCE: Table 11-1.

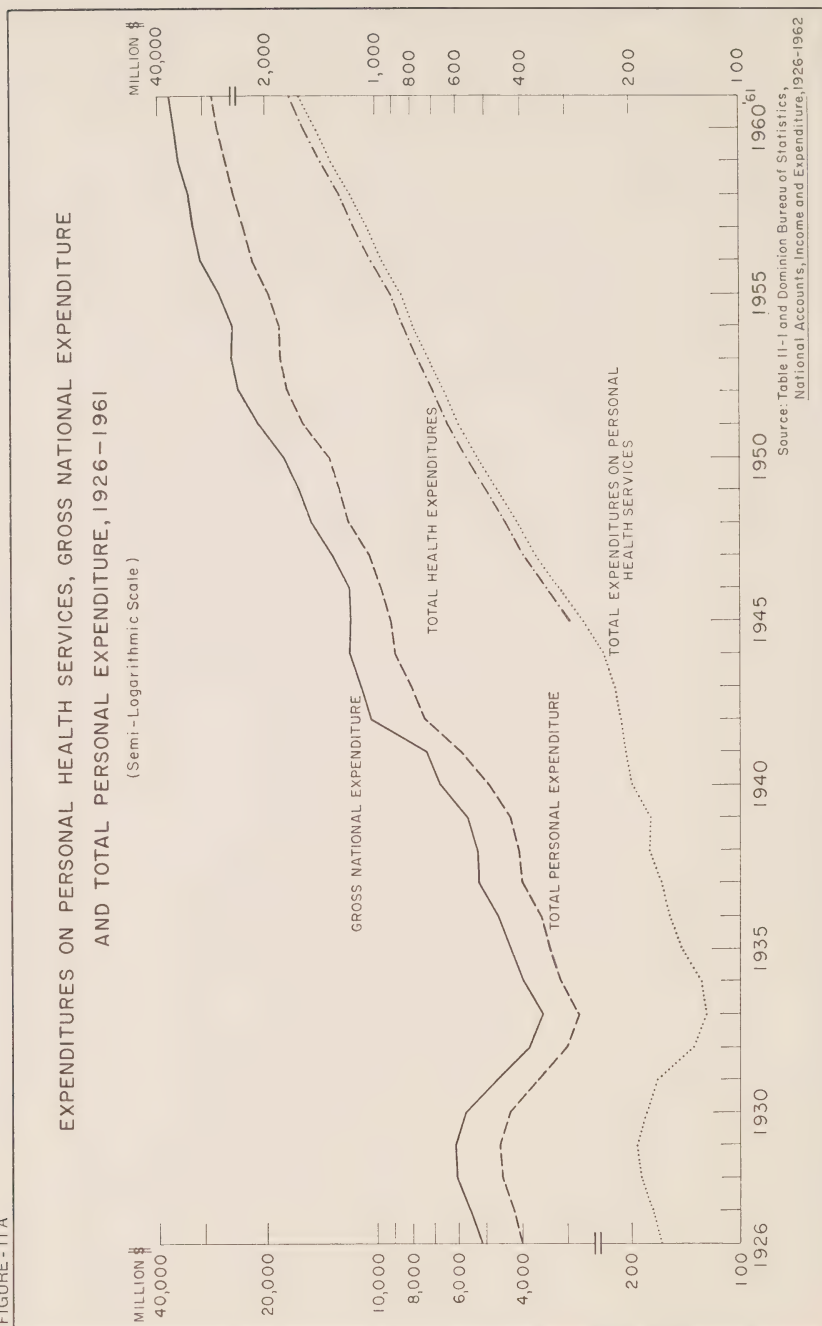
TABLE 11-3 PERCENTAGE DISTRIBUTION OF EXPENDITURES ON PERSONAL HEALTH SERVICES, BY TYPE OF EXPENDITURE, CANADA, 1926-1961

Year	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Administrative Cost of Health Insurance	All Services*	All Services	Prescribed Drugs	Total Expenditures
	Percentages						Percentages		
1926	38.9	11.7	31.3	16.2	1.9	100.0	—	—	—
1927	39.7	11.9	31.0	15.5	1.9	100.0	—	—	—
1928	39.6	11.9	30.1	16.6	1.9	100.0	—	—	—
1929	40.1	12.1	29.5	16.6	1.8	100.0	—	—	—
1930	39.1	11.8	31.9	15.4	1.9	100.0	—	—	—
1931	37.5	11.3	34.2	15.3	1.7	100.0	—	—	—
1932	33.7	10.1	40.4	14.0	1.7	100.0	—	—	—
1933	30.6	9.2	44.6	13.7	1.9	100.0	—	—	—
1934	28.7	8.7	48.0	12.5	2.0	100.0	—	—	—
1935	29.8	9.0	46.4	12.9	1.9	100.0	—	—	—
1936	28.4	8.6	48.2	12.8	2.0	100.0	—	—	—
1937	30.2	9.1	45.8	12.7	2.2	100.0	—	—	—
1938	30.8	9.4	45.8	11.8	2.2	100.0	—	—	—
1939	32.2	9.9	44.8	10.7	2.3	100.0	—	—	—
1940	31.6	9.6	45.1	11.6	2.2	100.0	—	—	—
1941	32.3	10.6	43.2	11.6	2.4	100.0	—	—	—
1942	32.4	10.0	43.8	11.3	2.6	100.0	—	—	—
1943	31.0	10.4	46.2	9.9	2.4	100.0	—	—	—
1944	27.8	10.7	48.6	9.7	3.2	100.0	—	—	—
1945	28.3	10.9	48.0	9.3	3.5	100.0	92.1	7.9	100.0
1946	27.6	11.5	47.9	8.9	4.0	100.0	92.1	7.9	100.0
1947	24.9	10.6	51.1	9.3	4.2	100.0	92.7	7.3	100.0
1948	24.7	9.8	52.3	8.8	4.4	100.0	92.7	7.3	100.0
1949	25.2	9.2	53.1	8.1	4.4	100.0	93.1	6.9	100.0
1950	25.6	8.8	53.7	7.5	4.4	100.0	93.3	6.7	100.0
1951	25.6	8.5	54.7	7.0	4.2	100.0	93.3	6.7	100.0
1952	25.7	8.6	54.7	6.6	4.4	100.0	93.4	6.6	100.0
1953	24.6	8.4	56.2	6.3	4.5	100.0	93.6	6.4	100.0
1954	23.9	8.4	56.7	6.3	4.5	100.0	93.8	6.2	100.0
1955	24.3	8.1	56.5	6.5	4.6	100.0	93.5	6.5	100.0
1956	25.1	8.5	55.4	6.8	4.2	100.0	93.0	7.0	100.0
1957	25.4	8.3	55.4	6.6	4.2	100.0	92.6	7.4	100.0
1958	25.3	8.4	54.7	7.3	4.3	100.0	92.8	7.2	100.0
1959	24.8	7.6	55.7	7.1	4.8	100.0	92.9	7.1	100.0
1960	24.2	7.7	56.4	7.2	4.5	100.0	93.2	6.8	100.0
1961	23.8	7.4	57.3	7.1	4.5	100.0	93.5	6.5	100.0

*Percentages may not add up to 100 due to rounding.

SOURCE: Table 11-1.

FIGURE - 11 A



Our examination of past economic growth trends indicates that Canadians have displayed a willingness to save a sizeable proportion of their growing incomes. But as their incomes have increased they have not generally tended to save an increasing proportion of income. As a consequence, Canadians now enjoy a high average level of consumption which compares favourably with most other countries and our per capita consumption in real terms is significantly higher than that of our forefathers.¹ There have, of course, been periods when the long-run upward trend in real per capita consumption has been checked. In the great depression of the nineteen thirties when a high level of unemployment of labour and a significant decline in the use of capital facilities reduced purchasing power, per capita consumption in real terms increased very little and in the period 1930-1934 actually declined. Again in the war-time and immediate post-war period, rationing, price controls and other direct economic controls, tended to prevent rising incomes from being transformed completely into rising consumption. Since 1946, the Canadian consumer has been free generally to purchase what he wishes, limited only by the size of his growing disposable income, and in this period he has acquired automobiles, houses, household equipment, television sets, books, records, sporting equipment, along with services such as sports, the theatre, foreign travel, education and health services in quantities unparalleled in our history.

Concept of "Need" and "Demand"

The continued increase in consumption, however, bears only a slight relationship to the need to survive; to the biological minimum needed to sustain life. Indeed it is determined increasingly by a desire for variety and quality in consumption rather than by the increased satisfaction of purely physical needs. New products and new needs are continually created in our society and consumption patterns have consistently reflected these developments. In these circumstances it is not surprising that health expenditures have reached a level unparalleled in Canadian experience while still accounting for a relatively minor proportion of total consumer spending.² The demand for a wider variety and a better quality of health services has been part of the pattern of a demand for a higher standard of living generally; it has not been something unique. Canadians purchased more medical and hospital services, and have used more specialists and higher quality hospital services. They also drive bigger and more powerful cars, live in larger, more comfortable homes and, increasingly take their vacations abroad or in other regions of Canada rather than at home.

¹ Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 6.

² For a discussion of health expenditures as investment in human capital rather than a consumption expenditure, see Chapter 12.

TABLE 11-4 NET EXPENDITURE ON GENERAL AND PUBLIC HEALTH, BY LEVEL OF GOVERNMENT, CURRENT AND CONSTANT (1957) DOLLARS, CANADA, 1947-1961

Year	Federal	Pro- vincial	Muni- cipal*	All Governments		Percentage of GNE	All Governments		Percentage of GNE	Municipal Expenditures on Sanitation
				Total Expenditure	Per Capita Expenditure		Total Expenditure†	Per Capita Expenditure		
				millions of current dollars	\$		millions of constant (1957) dollars	\$		millions of current dollars
1947	3	11	7	21	1.67	0.16	38	3.03	0.19	29
1948	10	12	8	30	2.34	0.20	49	3.82	0.24	35
1949	13	12	9	34	2.53	0.21	52	3.87	0.24	37
1950	16	13	9	38	2.77	0.21	55	4.01	0.24	41
1951	21	15	10	46	3.28	0.22	59	4.21	0.24	50
1952	23	17	11	51	3.53	0.21	64	4.43	0.24	53
1953	27	19	12	58	3.91	0.23	70	4.72	0.25	71
1954	30	20	12	62	4.06	0.25	71	4.64	0.27	140
1955	32	24	13	69	4.40	0.25	77	4.91	0.27	107
1956	34	24	15	73	4.54	0.24	79	4.91	0.25	130
1957	37	27	15	79	4.76	0.25	79	4.76	0.25	130
1958	40	31	16	87	5.09	0.26	84	4.92	0.26	130
1959	43	32	18	93	5.32	0.27	86	4.92	0.26	147
1960	44	37	20	101	5.65	0.28	90	5.04	0.26	153
1961	44	40	21	105	5.76	0.29	91	4.99	0.26	166

*Excludes sanitation.

†Deflated by using Dominion Bureau of Statistics, implicit price index for government current expenditures.

SOURCE: Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964

TABLE 11-5 GROSS INVESTMENT IN HOSPITALS, CURRENT AND CONSTANT (1957) DOLLARS, CANADA, 1945-1963.*

Year	Construction	Machinery	Total Expenditures	Per Capita Expenditures	Percentage of GNE	Total Expenditures	Per Capita Expenditures	Percentage of GNE
	millions of current dollars			\$		millions of constant (1957) dollars	\$	
1945	18.9	3.4	22.3	1.85	0.19	44.7	3.70	0.22
1946	23.8	4.5	28.3	2.30	0.24	56.5	4.60	0.28
1947	27.0	6.1	33.1	2.64	0.25	56.7	4.52	0.28
1948	44.0	11.6	55.6	4.34	0.37	85.4	6.66	0.41
1949	61.3	10.1	71.4	5.31	0.44	103.4	7.69	0.48
1950	62.3	10.7	73.0	5.32	0.40	100.8	7.35	0.44
1951	65.5	13.4	78.9	5.63	0.37	97.1	6.93	0.40
1952	81.4	11.9	93.3	6.45	0.39	106.1	7.34	0.40
1953	103.1	15.2	118.3	7.97	0.47	131.9	8.89	0.48
1954	106.3	15.2	121.5	7.95	0.49	133.0	8.70	0.50
1955	129.9	16.2	146.1	9.31	0.54	158.1	10.07	0.54
1956	109.9	18.8	128.7	8.00	0.42	132.7	8.25	0.42
1957	111.6	19.0	130.6	7.86	0.41	130.6	7.86	0.41
1958	136.2	25.4	161.6	9.46	0.49	158.0	9.25	0.49
1959	128.2	23.7	151.9	8.69	0.44	144.4	8.26	0.43
1960	125.3	30.7	156.0	8.73	0.43	145.2	8.13	0.43
1961	146.6	31.2	177.8	9.75	0.47	163.9	8.98	0.47
1962†	152.2	28.6	180.8	9.74	0.45	—	—	—
1963‡	176.9	36.1	213.0	11.22	—	—	—	—

*Expenditures for repair and replacement are included in hospital expenditures.

†Preliminary.

‡Estimated.

Source: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 11-6 TOTAL EXPENDITURES ON ALL HEALTH SERVICES AND HOSPITAL CAPITAL, CANADA, 1947-1961

Year	Personal* Health Services	General and Public Health Services	Total Health Expenditures	Percentage of GNE	Capital Expenditures on Hospitals	Total Expenditures	Total Per Capita Expenditures	Percentage of GNE
	\$ '000,000				\$ '000,000		\$	
1947	394.6	21.0	415.6	3.16	33.1	448.7	35.75	3.41
1948	442.4	30.0	472.4	3.12	55.6	528.0	41.18	3.49
1949	499.5	34.0	533.5	3.26	71.4	604.9	44.98	3.70
1950	565.1	38.0	603.1	3.35	73.0	676.1	49.31	3.75
1951	639.9	46.0	685.9	3.24	78.9	764.8	54.59	3.61
1952	698.6	51.0	749.6	3.12	93.3	842.9	58.30	3.51
1953	767.0	58.0	825.0	3.30	118.3	943.3	63.54	3.77
1954	839.6	62.0	901.6	3.63	121.5	1,023.1	66.93	4.11
1955	909.4	69.0	978.4	3.61	146.1	1,124.5	71.63	4.14
1956	1,028.3	73.0	1,101.3	3.60	128.7	1,230.0	76.48	4.02
1957	1,142.6	79.0	1,221.6	3.83	130.6	1,352.2	81.41	4.24
1958	1,259.4	87.0	1,346.4	4.09	161.6	1,508.0	88.29	4.58
1959	1,419.6	93.0	1,512.6	4.33	151.9	1,664.5	95.21	4.77
1960	1,571.7	101.0	1,672.7	4.61	156.0	1,828.7	102.33	5.04
1961	1,723.9	105.0	1,828.9	4.89	177.8	2,006.7	110.01	5.36

*Includes prescribed drugs.

SOURCE: Tables 9-1, 9-4 and 9-5.

The demand for health services, however, depends on the existence of certain basic elements; on an awareness of need, on the belief that health services will satisfy this need plus the ability to turn need into demand by purchasing health care. We have already referred to the increase in life expectancy, the growing conviction that disease and disability need not produce as its consequence the loss of a child or parent before the biblical span of life is achieved, or the permanent disability of even the older members of the community. Increased urbanization, better transportation, more education per person, the spread of knowledge, have made people aware of the benefits to be derived from medical and hospital care or drugs, while the scientific and technical advances that have provided families with television, jet transport and a host of other goods and services that did not exist before the war, continues to create new drugs; new surgical techniques; diagnostic, therapeutic and rehabilitation techniques that offer the consumer an alter-

TABLE 11-7 ESTIMATED TOTAL EXPENDITURES ON PERSONAL HEALTH SERVICES, HOSPITAL CAPITAL, RESEARCH AND EDUCATION, CANADA, 1961

Year	Operating Costs Health Services		Operating Costs Hospital Services		Total Operating Cost		Public Health Services		Capital Expenditures		Research Expenditures*		Grants-in-Aid of Education†	
	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost
	\$ '000,000	\$	\$ '000,000	\$	\$ '000,000	\$	\$ '000,000	\$	\$ '000,000	\$	\$ '000,000	\$	\$ '000,000	\$
1961	800.1	43.87	923.8	50.65	1,723.9	94.52	105.0	5.76	177.8	9.75	12.0	0.66	3.7	0.20

Year	All Health Expenditures Excluding Non-Prescribed Drugs			Estimated Expenditures on Non-Prescribed Drugs and Pharmaceuticals			All Health Expenditures Including Non-Prescribed Drugs		
	Total Cost	Per Capita Cost	Percentage of GNE	Total Cost	Per Capita Cost	Percentage of GNE	Total	Per Capita	Percentage of GNE
	\$ '000,000	\$		\$ '000,000	\$		\$ '000,000		
1961	2,018.7	110.69	5.39	210.0	122.20		2,228.7	122.20	5.96

* May include some research expenditures already included under Public Health Services.
† Grants-in-Aid of Health Education have been included with expenditures on Public Health Services. They are not included in the totals.
Source: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964 and Table 11-6.

native to the pain and catastrophic consequences of actual or probable illness. The gradual displacement of home production by market production that we see in the development of processed foods and packaged entertainment has its counterpart in the health industry where birth, death and the treatment of mental or physical illness have been shifted from home to the hospital with consequent increase in the need for hospital services—while the home remedy is displaced by the physicians' prescription available at the near-by pharmacy.

This does not mean that the need for health services is unlimited. Medical care generally is not wanted for its own sake; most health services are not particularly pleasant; and even when they are prepaid they may involve additional costs to the consumer in terms of foregone income or leisure. Budget studies reveal that at low levels of living standards, expenditures on health care increase at about the same rate as income so that they represent about the same percentage of total spending at each income level. With the higher level of living standards attained in recent years a decreasing proportion of family income goes for health care as incomes rise. Thus in 1959, urban families with incomes under \$3,000 spent about 5.5 per cent of their income on health services, at each income level above this the percentage spent on health tended to decline, and for families with incomes over \$10,000 amounted only to 3.4 per cent. On the other hand, in a community where a large proportion of the population do not obtain, as yet, the quantity and variety of health services received by those with higher incomes, but who recognize the need for health care and aspire to the consumption patterns of the well-to-do; there exists a great and unsatisfied need for health services. The transformation of this need into a corresponding level of demand for health services will depend essentially on the ability of individuals and families to purchase health care. This will depend, in turn, on the growth of their incomes, their asset holdings, the availability of professional manpower and specialized capital equipment which influence the prices of health services, and their desire to obtain all the other goods and services which make up the standard of living in North America. The influence of the availability and manpower on health services we will discuss later in this chapter; here we wish to examine what can be called the demand for health services.

DEMAND FOR HEALTH SERVICES

We have already examined the growth of personal income in Canada.¹ With rising personal incomes, broadly distributed among income groups, it is not surprising that total expenditures on health services have expanded

¹ See Chapter 4.

significantly. There is another factor which materially influences personal spending on any one category of consumption. If the pattern of tastes change as income increases, it may be that the proportion of total income devoted to certain kinds of goods may decline thus permitting the proportion of income devoted to some other commodity to increase. Increasing incomes are therefore not only associated with increasing absolute expenditures on some commodities but also with increasing proportionate expenditures. Such trends in consumer spending have come to be called "Engel's Law", after a Belgian statistician Ernst Engel who was one of the first to identify this behaviour. The best-known Engel-type law is the proposition that as income increases, the proportion devoted to expenditure on food will decline leaving a larger proportion to be spent on other things such as services. The validation of these relations over a long period of time still awaits a test based on adequate data. However, over the period which we have reviewed, the consumption of many basic foods and articles of clothing has not risen as rapidly as incomes. Hence additional disposable income became available that could be allocated to health care without reducing the level of living in terms of other basic necessities of life.

Table 11-8 and Chart B indicate the relative importance of expenditures on health care in the pattern of consumer spending over the past three decades. It is evident, despite the substantial increase in expenditures, and increased importance of health in the average consumer's budget that food, clothing, transportation, shelter, and even tobacco and alcohol, have always commanded a greater share of the consumer dollar. In the late nineteen twenties, when expenditures on personal health services amounted to \$185 million, expenditures on food amounted to \$1,131 million, and tobacco and alcohol to \$226 million. By the late nineteen fifties, when expenditures on personal health services had risen to \$1,465 million, expenditures on food amounted to \$5,654 million and tobacco and alcohol to \$1,598 million. Indeed considering that total personal expenditures rose from \$4,287 million in the pre-depression period to \$23,641 million at the beginning of the nineteen sixties, the pattern of consumer spending has displayed a remarkable stability. Except for expenditures on clothing and personal furnishings which fell by 4.5 percentage points no other component varied by more than 2.7 percentage points from the 1927-1929 figure. Expenditures on personal health services have risen, it is true, by 1.9 percentage points. But other components of personal spending also have risen. In the case of transportation which rose by 2.7 percentage points reflecting the increasing ownership of motorcars by Canadians, the rate of expansion was greater than for health services.

The pattern of spending indicated by Table 11-8 is also evident if we examine the budgets of Canadian households over the period 1937-39 to 1959. Because expenditure surveys have been concentrated mainly on

TABLE 11-8 AVERAGE PERSONAL EXPENDITURE ON CONSUMER GOODS AND SERVICES AND PERCENTAGE DISTRIBUTION OF TOTAL PERSONAL EXPENDITURES, CANADA, SELECTED PERIODS, 1927-1961

Item	1927-29		1937-39		1947-49	
	Average Expenditures	Percent-age of Total Expenditures	Average Expenditures	Percent-age of Total Expenditures	Average Expenditures	Percent-age of Total Expenditures
	\$ '000,000		\$ '000,000		\$ '000,000	
Food.....	1,131	26.4	966	24.5	2,717	26.9
Tobacco and Alcohol.....	226	5.3	215	5.5	830	8.2
Clothing and Personal Furnishings.....	619	14.4	474	12.0	1,410	14.0
Shelter.....	592	13.8	566	14.4	1,076	10.7
Household Operations.....	597	13.9	580	14.7	1,323	13.1
Transportation.....	390	9.1	369	9.4	943	9.3
Personal Health Services*.....	185	4.3	174	4.4	414	4.1
Drugs, Pharmaceuticals and Other Personal Services.....	97	2.3	104	2.6	270	2.7
Miscellaneous.....	450	10.5	493	12.5	1,115	11.0
TOTAL†.....	4,287	100.0	3,941	100.0	10,098	100.0
	1952-54		1957-59		1959-61	
Food.....	3,906	25.0	5,217	24.4	5,654	23.9
Tobacco and Alcohol.....	1,099	7.0	1,454	6.8	1,598	6.8
Clothing and Personal Furnishings.....	1,824	11.7	2,179	10.2	2,344	9.9
Shelter.....	1,980	12.7	3,165	14.8	3,630	15.4
Household Operations.....	1,993	12.8	2,723	12.7	2,940	12.4
Transportation.....	1,725	11.1	2,527	11.8	2,792	11.8
Personal Health Services*.....	720	4.6	1,182	5.5	1,465	6.2
Drugs, Pharmaceuticals and Other Personal Services.....	380	2.4	527	2.5	567	2.4
Miscellaneous.....	1,976	12.7	2,428	11.3	2,651	11.2
TOTAL†.....	15,603	100.0	21,402	100.0	23,641	100.0

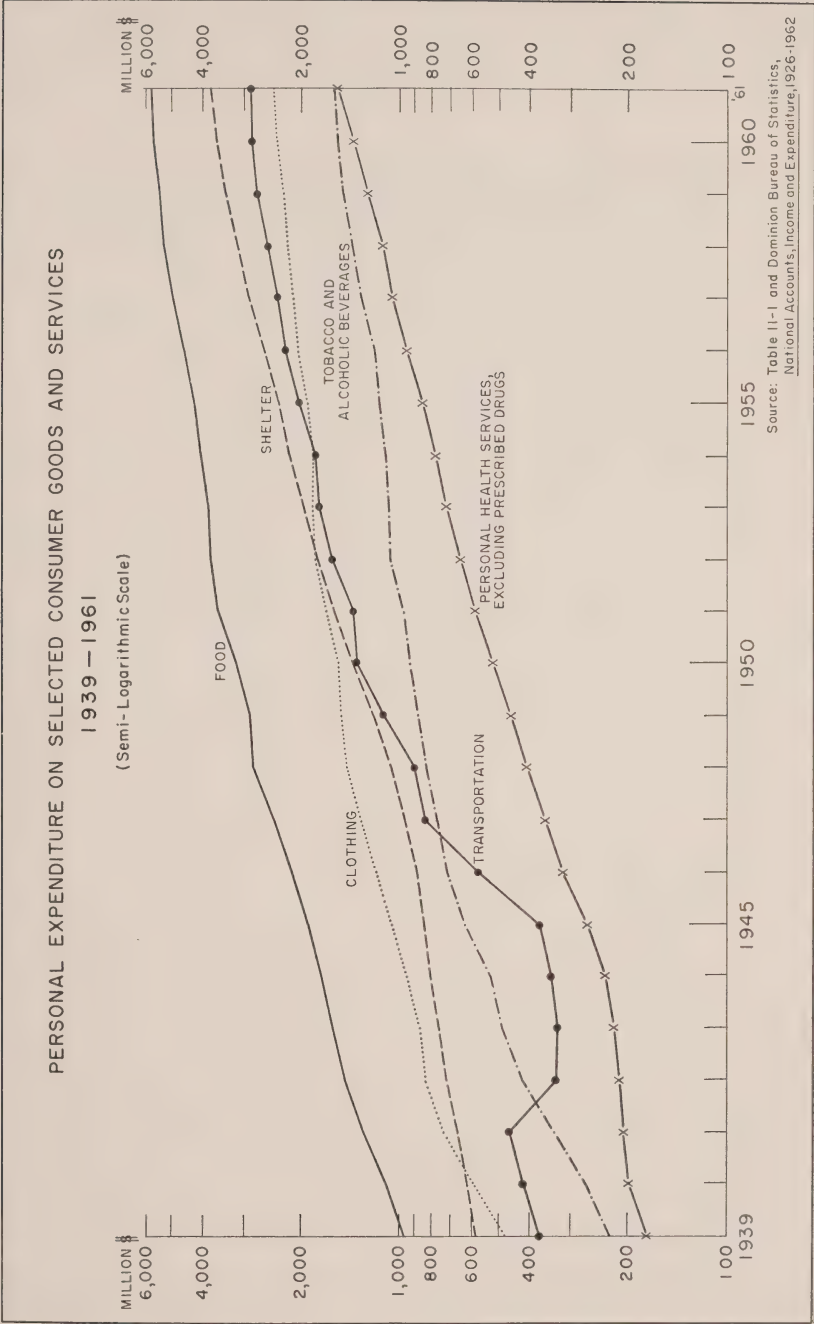
*Includes expenditures for medical, dental, hospital, other nursing, health insurance administration, chiropractic, osteopath and optometrist services.

†Adjusted by including expenditures for hospital care provided in federal and provincial government hospitals and cost of administering public hospital care programmes.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

two- or more-person families, living in urban areas, and since very low income families and high income families have generally been excluded, the data do not tell the full story covering the spending patterns for all income classes and for rural inhabitants. For the families for which we have roughly

FIGURE - 11 B



comparable data over time, average expenditures on health services rose from \$63 in 1937-38 to \$221 in 1959. As a percentage of total expenditures, the amount spent in both periods was approximately the same, 4.6 per cent, while in 1947-48 the percentage spent on health services fell to 3.9 per cent.¹

Health and Other Consumer Expenditures

Although we recognize that the growth of spending on health services has been accompanied by increased spending on other goods and services, we are aware that expenditures on health services have grown more rapidly and that this rapid rate of growth has continued until the present day when there has been a general tendency among other classes of spending to slow down. It is important to recognize, in this context, that there have been periods when health expenditures have lagged behind other types of spending, that other categories of spending—particularly personal expenditures on services generally—have also increased significantly, and that the rapid growth of spending on personal health services has become somewhat unique only in the past five or six years when the rate of growth of the output of the Canadian economy and spending generally has tended to slow down.²

These developments can be seen from an examination of Tables 11-9 and 11-17 which describe the trend rate of growth in total health spending and expenditures on individual health items—the annual average percentage increase in spending for a number of sub-periods. Over the period 1926 to 1961, while personal health expenditures grew somewhat more rapidly than either Gross National Expenditure or total personal expenditures (6.7 compared to 5.8 and 5.7 per cent) the trend rate of growth was considerably lower in the period 1926 to 1944 and has reached a high level only in the post-war period. Thus between 1926 and 1944, GNE grew at a trend rate of 4.7 per cent while spending on personal health services grew at a trend rate of 2 per cent. In the post-war period the reverse has been the case

¹ See Dominion Bureau of Statistics, *Consumer Expenditure Surveys, 1937-38, 1947-48 and 1959*, Ottawa: Queen's Printer. These figures are not directly comparable with the data previously presented since they exclude expenditures on personal health services financed by governments from sales and other taxes (but not hospital premiums) and include expenditures for non-prescribed drugs. In 1959, the elimination of expenditures on non-prescribed drugs would have the effect of reducing the percentage spent on health care to around 4.4 per cent while the reduction would probably have been considerably greater for 1937-39. Since the 1937-39 survey excluded all those not self-supporting and since few self-supporting families received health services without paying directly for them, the expenditures approximate to consumption of health services. In 1959, when some provinces made health services available at little or no direct cost to the consumer, and where premiums did not approximate the full cost of the programme, the consumer expenditure survey under-estimated the amount spent on health since some health expenditures appear as a sales tax or a tax on incomes. In consequence, the 1959 consumer expenditure survey under-estimates the proportion paid for health services compared to the 1937-39 survey.

² We are referring to the period 1957 to 1961 during which the growth of the Canadian economy slowed down somewhat but which was followed by a significant rate of increase in economic expansion in 1962 and 1963 comparing favourably with the pre-1957 rate of growth.

with GNE increasing at a trend rate of 7.4 per cent and spending on personal health services at a rate of 11.8 per cent a year. The same is true for individual health items; all except hospital expenditures grew but little in the pre-war period and all grew much more rapidly in the post-war period.

TABLE 11-9 AVERAGE ANNUAL PERCENTAGE CHANGE IN EXPENDITURES ON PERSONAL HEALTH SERVICES, CANADA, SELECTED PERIODS, 1926-1961*

Period	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Administrative Costs of Health Insurance	All Services	Prescribed Drugs
1926-29	6.3	6.1	3.1	5.8	3.1	5.1	—
1930-34	-17.9	-17.8	1.4	-14.9	-7.8	-9.2	—
1935-39	6.8	7.4	3.9	0.0	10.0	4.8	—
1940-44	1.3	7.6	6.4	0.0	14.9	4.6	—
1945-49	11.3	9.9	17.7	10.7	20.9	14.7	10.7
1950-54	8.7	9.3	12.2	6.0	11.6	10.6	8.3
1955-59	12.1	9.9	11.2	14.8	18.9	11.6	14.0
1957-61	9.2	8.0	12.0	13.2	12.4	11.1	7.2
1926-44	0.1	1.5	4.5	- 0.9	5.0	2.0	—
1945-61	10.6	9.0	13.0	10.0	13.4	11.8	10.2
1926-61	5.2	5.3	8.5	4.2	9.4	6.7	—

*Except where specifically stated all average annual rates of increase in this chapter have been calculated by the compound interest formula applied to the terminal points.

SOURCE: Based on Table 11-1.

That the trend rate of growth of spending on health services has been dissimilar to food, clothing and other non-durable goods, but similar to most services can be seen from Tables 11-8 and 11-10. Thus spending on food grew more rapidly in the period before 1950 than it did in the decade of the nineteen fifties as did clothing and personal furnishings; but transportation expenditures grew most rapidly in the post-war period as did expenditures for shelter. A pattern of spending emerges which indicates that in the pre-war and war periods, expenditures on non-durable goods such as clothing and personal furnishings grew much more rapidly than expenditures on durable goods such as automobiles, household appliances, radio and tele-

vision sets or on services such as health, education, recreation, entertainment and travel, while the reverse has been true in the post-war period. In the years 1926 to 1944 spending on non-durable goods grew at a trend rate of 4 per cent, expenditures on services generally at 2.3 per cent, personal health services at 2 per cent and durables at only 0.8 per cent. In the post-war period, expenditures on durables grew the most rapidly at 13.6 per cent, followed by personal health services at 11.8 per cent, services in general at 9.2 per cent and non-durables at 6.8 per cent. Since 1957 expenditures on services have continued to grow more rapidly than either durable or non-durable goods, 6 per cent compared to 4 per cent.

The causes of the lag in spending on services generally are not our concern but it is important to recognize that in the depression period, when income fell off notably, available income had to be devoted to the bare necessities needed to maintain life in the Canadian climate; new homes, cars, refrigerators, stoves, travel, higher education and health services beyond the absolute minimum, remained as needs that could not be transformed into demand. Even family formation was postponed as jobs were hard to find and the number of children limited among established households when another child competed with a reasonable standard of living for the first or second child. In the war and immediate post-war periods, though employment and income increased, dislocations such as service life, rent controls, price controls, shortages of cars and durables, shortages of hospital beds in

TABLE 11-10 AVERAGE ANNUAL PERCENTAGE CHANGE IN PERSONAL EXPENDITURES ON SELECTED CATEGORIES OF EXPENDITURES, CANADA, SELECTED PERIODS, 1926-1962

Period	Personal Health Services	Durable Goods	Non-Durable Goods	Services
1926-29.....	5	15	12	5
1930-34.....	-9	-10	-6	-7
1935-39.....	5	7	4	5
1940-44.....	5	2	12	7
1945-49.....	15	30	12	10
1950-54.....	11	12	5	11
1955-59.....	12	5	6	9
1957-62.....	—	4	4	6
1926-44.....	2.0	0.8	4.0	2.3
1945-61.....	11.8	13.6	6.8	9.2
1926-61.....	6.7	7.0	5.4	4.3

SOURCE: Based on Table 11-9 and Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1926-1962*, Ottawa: Queen's Printer.

some regions and professional manpower, led to restrictions on purchases of certain goods and services, while commodities in relatively abundant supply such as foodstuffs and clothing could be purchased with only slight difficulty.

Once basic needs were satisfied, and with income still increasing, Canadians were ready to shift their expenditures from food and clothing to homes, automobiles, stoves, refrigerators, washing machines and television as well as to foreign travel, education and health, and when the demand for durables became temporarily saturated, to buy even more services. This latter process was slowed down by a desire for more completely processed foods, to buy the improved cars, freezers, automatic washers, dryers, air-conditioning units and a host of other consumer durables that came on the market as a result of technological advances and consumer desire to benefit from the fruits of economic progress, but it continues to remain at a significantly high level.

The service component in the consumer budget thus has become more and more important in the past decade. Its increasingly greater relative role represents, however, primarily the re-establishment of a pattern that existed before the nineteen thirties and which was distorted by the depression and World War II. In 1926-29, the volume of services measured in 1957 dollars accounted for 36.2 per cent of the consumer dollar. In 1960-62, despite their rapid post-war growth, they accounted for only 36.7 per cent. The shift towards expenditures on services that has occurred in the post-war period to a substantial degree represents a "catching-up" as it were with the long-term relationship between expenditures on services and personal income. The relationship between services and other categories of spending that characterized the consumers' budget nearly thirty year ago has been re-established. It may well be that this trend will continue into the future since a wealthy society may decide to take an increasing proportion of its real income in services rather than commodities. This shift, however, is unlikely to be rapid, or substantial since the increased rate of family formation expected in the second half of the nineteen sixties, along with a propensity of families to improve their standard of housing and ownership of cars, will create a demand for consumer capital which could well grow at a more rapid rate than consumer demand for health and educational services for a period of time.

Factors Contributing to the Long-term Trends in Health Spending

Canada's historical record therefore suggests that consumer spending of all kinds rises with income, but that the trend rate of growth of spending on individual goods or services, or categories of goods and services, may vary in the short run since it depends on a great many more variables than

disposable income. Expenditures on durable goods are influenced by the stock and the age of assets and the readily available credit of consumers; while political crises, weather, advertising, the steady stream of product innovation and changes in the taxation and other fiscal policies of governments, affect not only spending on durables but all other items as well. Yet the historical record suggests that shifts in consumer spending have been remarkably small. Divergences from the long-term relationships have developed, but ultimately a movement back to the trend relationship has come about. In the realm of consumption this is to be expected since to a large extent we do not wish to consume only food or clothing or shelter or health services, but some mixture which satisfies our varied desires within the constraints set by our budgets. The products of each industry might well be considered as passing through three stages of demand: a "luxury" demand, a subsistence or culture need, and finally a demand that depends essentially on the growth of population and real per capita income.¹ This does not mean however, that the "normal" proportion of GNE that is devoted to food or to health is fixed or that consumers will always, in the long run, spend a given proportion of their disposable income on some specific category of consumption. What it does mean is that if the trend rate of growth of spending on some item grows more rapidly in the short run than the growth of income generally, that sooner or later this growth rate will taper off. This is true for health expenditures as it is for goods and services in general. Health services, generally, are not wanted for their own sake. There is a limit to the amount of physicians' care, dental care, hospital services and prescribed drugs that the average citizen will consume even if such services were completely free. Engel's law surely applies to health services just as much as it does to basic food.

Yet given that consumer spending has increased as personal disposable incomes have risen, and given that spending on services generally has risen more rapidly than other categories of consumer spending, there can be no doubt that expenditures on health services have risen more rapidly than would be warranted by a generalized "catching-up" theory, especially since recently they have increased particularly rapidly compared with certain other goods and services for which the consumers' appetite is not yet satiated. Here we must examine the forces that have significantly affected health expenditures, that is the taxation-subsidy policies of Canadian governments, and the widespread development of public and private health insurance programmes.

The general policy of Canadian governments, that excludes health services, though not prescribed drugs, from sales tax; along with the policy

¹ For further discussion, see Brown, T. M., *op. cit.*, Chapter 2.

of the Government of Canada that permits certain medical expenses to be deducted from taxable income; by themselves have tended to shift personal consumption towards health care and away from other goods and services that are taxed. Further, the development of private health insurance programmes, many of them subsidized by employers out of tax-free funds; along with the recent growth of public welfare programmes which provide free medical care, dental care, prescribed drugs and home nursing care for the indigent and low income groups, has enabled a growing number of Canadians to receive the health care they need without reference to their incomes or their savings. We have described the expansion of these programmes in more detail in Chapter 10 of this Report.

Income maintenance programmes such as old-age assistance, old-age security and family allowances, have provided additional income for those individuals and families who are likely to have higher health expenditures than those who do not receive such payments. Finally, and most significantly, the increasing provision of hospital care for the tuberculous and the mentally ill by the provinces, the introduction in 1957 of the National Hospital Insurance Programme and increasing out-patient diagnostic and treatment services by some provinces, has made it possible for nearly all Canadians to receive the hospital care they need, providing they can obtain physicians' services from their own resources or through other means.

Disposable income has been rising, but the transfer payments that have counted for a larger share of personal disposable income each year, have been provided not in the form of cash but in the form of health care. To the extent that this involves a subsidy from one group to another, the subsidy has taken the form of a direct provision of health services, while in other cases, individuals consume health services which they otherwise might not have done if left to their own devices. With incomes higher, and greater awareness of the benefits of health care, the demand for health services has remained at a high level up to the present. Subsidies made it possible for Canadians to obtain health services that otherwise they might not obtain for many years until the incomes of very low income groups had increased sufficiently to permit them to purchase them. In short they speed up that day when no one will be deprived of the health services they need through lack of resources.

If personal real income were to double over the next generation we can expect that most Canadians could purchase the health services they need provided the prices of such services do not rise considerably more rapidly than other prices. Subsidized health services have the effect of making the achievement of this situation possible that much sooner. The rising expenditures that accompany this demand are, in essence, the concentration of increased demand in a shorter period of time. They will ultimately turn down at some future date.

FURTHER DETERMINANTS OF SPENDING ON HEALTH SERVICES

Population, Volume, Quality and Price

We have examined the long-term trend in total health expenditures as well as the fluctuations in this long-term trend, and we have outlined the demand factors that have led to a substantial increase in spending in the post-war decade. Since we wish to project future spending on the basis of spending on specific health items, as well as total spending, it is useful to examine the trend rate of growth of spending on individual health items, and particularly to examine some further determinants of such spending; that is the effect of the supply of health personnel and capital on the prices of health services.

In this analysis it is convenient to attribute the growth of Canadian spending on health services to four major factors: changes in population, changes in the per capita purchases of health services reflecting the volume of health care consumed, changes in the quality of health services and changes in the price of such services. Given the state of our knowledge, the measurement of the contribution of each of these factors is a difficult task. Hence our estimates should only be considered as a reasonable quantitative approximation of the various factors involved.

Briefly, if we assume that the quality of service remains unchanged over time, then the amount spent on health will change directly with changes in total population, per capita consumption and prices. For example, if population grew at the rate of 2 per cent a year, per capita consumption at the rate of 2 per cent a year and prices on the average rose at 2 per cent a year, then total spending on health would rise by approximately 6.12 per cent a year; the result of multiplying an index of population change, by an index of quantity change, by an index of price change.¹ Conversely, if we know total expenditures, population growth and price change, we can calculate what has been the rate of growth of real per capita consumption. We can roughly estimate what has been the increase in the average volume of services received by every Canadian within some specific time period. To this end we have prepared estimates of the historical spending on health services on a per capita basis which eliminates the effect of population change and on a constant (1957) dollar basis which eliminates the effect of price change. Per capita constant (1957) dollar estimates of spending on health services then approximate the volume of health services actually received by the average Canadian in the period under review.

¹ For example, $102 \times 102 \times 102 = 106.12$.

The elimination of the effects of population growth on health expenditures presents no particular conceptual problem. The same cannot be said for the elimination of the effects of price change. In the process of measuring the volume of output our technique has been to divide current expenditures on health services by current prices and then to revalue this indirect estimate of volume in the prices that existed in 1957. Thus estimates of the volume of health services are called constant (1957) dollar estimates since the prices used in each year were those of 1957. Yet there is a good deal of difficulty in eliminating current price change because an increase or a decrease in price may indicate something other than pure price change. In other words, prices may change because output in some way has changed; because the quality of output is different from what it had been in an earlier period.¹

In the field of health services significant changes in quality have occurred, particularly with respect to the type of hospital care received, physicians' services, and prescription drugs. For example, if the price of a physician's office call were to rise by 20 per cent, while for any specific illness the number of office calls needed fell by 50 per cent, our estimates would show that spending on physicians' services rose because the price of a service had risen while if the output priced was a cured illness, instead of an office call, the quality improvement would be such as to justify the claim that the price had actually declined. If through the use of better equipment, new materials and ancillary personnel, the provision of a denture for a patient takes much less time and gives greater satisfaction, even if the price of dentures or a dentist's office call rises, the rise in price may be more than offset by the improvement in quality. Similarly the price of a specific operation may have gone up because it now requires a team of highly skilled personnel and a large quantity of equipment, but if the patient now survives while 30 years ago the chances were that he would die, is it justifiable to claim that the price of the operation has risen or, that in real terms, it has fallen? The same, of course can be said about many drugs; they cost more and they cause the index of drug prices to rise, but they yield far superior results than the lower priced drugs they replace.

The measurement of the change in the price of hospital care also involves many difficulties. Over most of the period, price change has been

¹ For example, if 1,000 cars had been produced in 1950 and each car sold for \$2,500 then the value of output would have been \$2.5 million. In 1963 if the output of cars was still 1,000 but the price had risen to \$3,000, total expenditures on cars would have risen to \$3 million and it might be said that this increase in expenditure was due solely to price change. In actual fact we cannot say with certainty that the volume of output has remained constant and prices risen by 20 per cent, since the 1963 car may have more power, more style, more economy of operation, more durability and offer more consumer satisfaction generally. The quality of output has risen and more than compensated for the increase in the price. The 1963 buyer gets more car for his money than did the 1950 buyer and any measuring device that fails to take account of quality change can seriously overestimate the extent of pure price change and underestimate the true growth of output.

TABLE 11-11 IMPLICIT PRICE INDEXES SELECTED HEALTH EXPENDITURES AND OTHER ITEMS, CANADA, 1926-1961*

(1957=100.0)

Year	Physicians' Services	Dentists' Services	Hospital Services	All Services	Prescribed Drugs	Hospital Construction†	Personal Expenditures on Services	Government Expenditures on Goods and Services	Business Gross Fixed Capital Formation	Gross National Expenditure
1926	61.5	90.0	30.6	48.0	—	—	—	—	—	51.0
1927	61.0	89.0	31.0	48.5	—	—	—	—	—	50.5
1928	62.0	88.0	32.0	49.5	—	—	—	—	—	50.5
1929	62.0	89.0	32.5	50.0	—	—	—	—	—	51.5
1930	62.0	86.0	33.0	49.5	—	—	—	—	—	50.0
1931	61.5	75.0	32.5	47.5	—	—	—	—	—	47.0
1932	59.0	66.0	32.5	44.5	—	—	—	—	—	42.5
1933	58.0	57.0	32.0	42.0	—	—	—	—	—	42.0
1934	53.5	55.0	32.0	41.0	—	—	—	—	—	42.0
1935	59.0	55.5	32.0	41.5	—	—	—	—	—	42.5
1936	59.0	55.5	32.5	42.0	—	—	—	—	—	44.0
1937	59.0	58.5	32.5	42.5	—	—	—	—	—	45.5
1938	59.0	56.5	33.0	43.0	—	—	—	—	—	45.0
1939	58.5	57.5	33.5	43.5	—	—	—	—	—	43.0
1940	58.5	57.5	33.5	43.5	—	—	—	—	—	46.0
1941	59.5	59.0	33.0	43.5	—	—	—	—	—	50.5
1942	60.0	60.0	34.5	43.5	—	—	—	—	—	52.5
1943	60.5	60.5	36.0	46.0	—	—	—	—	—	54.5
1944	62.5	61.5	38.0	47.0	—	—	—	—	—	56.0
1945	63.5	62.5	40.5	49.5	73.5	50.0	56.0	53.9	50.6	57.5
1946	64.5	65.0	43.5	52.0	73.5	51.0	—	—	—	59.0
1947	67.0	65.5	51.0	57.5	77.5	58.5	—	—	—	64.0
1948	73.0	68.0	56.0	62.5	85.5	65.0	—	—	—	73.0
1949	76.5	71.0	61.0	65.5	87.5	69.0	—	—	—	75.5
1950	77.5	74.5	65.5	70.5	88.5	72.5	—	—	—	78.8
1951	82.5	79.0	73.0	72.0	93.5	81.5	—	—	—	84.0
1952	87.0	84.0	76.0	80.0	94.0	88.0	—	—	—	90.5
1953	90.0	87.0	83.0	84.5	95.0	89.5	—	—	—	91.0
1954	92.0	89.0	86.5	89.0	95.5	91.5	—	—	—	93.0
1955	93.5	92.5	90.5	91.5	97.0	92.0	92.5	90.1	91.7	93.5

TABLE 11-11 IMPLICIT PRICE INDEXES SELECTED HEALTH EXPENDITURES AND OTHER ITEMS, CANADA, 1926-1961* (*Concluded*)

(1957 = 100.0)

Year	Physicians' Services	Dentists' Services	Hospital Services	All Services	Prescribed Drugs	Hospital Construction†	Personal Expenditures on Services	Government Expenditures on Goods and Services	Business Gross Fixed Capital Formation	Gross National Expenditure
1956	96.0	94.0	93.0	95.0	97.5	97.0	94.5	95.1	96.6	97.0
1957	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1958	106.0	104.5	103.5	104.0	103.5	102.0	103.5	101.1	102.0	102.0
1959	108.0	108.0	107.0	106.0	108.0	105.0	106.5	104.6	105.1	104.0
1960	109.0	113.0	109.0	109.0	111.5	107.5	108.5	108.0	107.4	106.0
1961	111.0	114.5	111.0	110.0	106.6	108.0	112.0	110.1	108.4	106.3

*Implicit price index used to deflate expenditures in "other services" was index of prices of physicians' services. Index used to deflate administrative costs of health insurance was the index of GNE. Implicit price indexes have been rounded to the nearest half percentage point except for Government Expenditures on Goods and Services and Business Capital Formation.

†Deflated by using the implicit price index for Business Gross Fixed Capital Formation.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Dominion Bureau of Statistics, *National Accounts, Income and Expenditure*, 1926-1961, and supplementary data.

eliminated in our estimates by measuring the changes in price of a day of hospital care although for the period from 1955 the deflation has been carried out by holding the prices of labour, materials and other inputs constant at 1957 levels. But both of these techniques eliminate any possible increase in productivity, of increased output from the same amounts of resources. A rise in the price of a day of hospital care may be the consequence of a greater concentration of diagnostic and therapeutic procedures in the first few days of care combined with a significant decline in the number of days of care required for a given illness. Yet this improvement in quality, in real output, would not be fully reflected in the type of measurement available to us and consequently the increase in the price of hospital care would tend to be overstated. On the other hand, if one now has to queue for a hospital bed where formerly these were available immediately on payment of a per diem rate it could be argued that the quality of hospital care has deteriorated and the real price of a day of hospital care has risen substantially more than that indicated by the price index.

Price indexes themselves, which are used to convert total expenditures into a measure of the volume of output or consumption, are not free from error. The prices upon which they are based may not be completely representative of all the health services purchased and they may not reflect fully the prices of all transactions that relate to the specific services priced. In short, we cannot emphasize too strongly that until the problem of measuring quality change of health care can be dealt with more effectively and until a larger number of health services and commodities are priced, that all estimates of the trends in price and volume of health services and commodities presented in our study must be considered what they are: a first approximation of trends. For our purposes, the estimates are adequate to illustrate the changing elements in the health care efforts of Canadians.

Population Increases and Health Spending

It is to be expected that health expenditures will increase as population increases since more children are born, more people fall ill, more people die, all of which require health services in our society. Since the Canadian population nearly doubled between 1926 and 1961, rising from 9.5 million to 18.2 million, it might be expected that expenditures on health services, assuming everything else remained constant, would also double. In addition, however, as the life span of Canadians has been extended, the proportion of the elderly in the population has risen from 4.8 per cent in the early nineteen twenties to 7.8 per cent of the population in 1961. This increase in the proportion of elderly now is slowing down, but the effect has been to increase that part of the population which is more prone to serious illness and thus to need more health services. We have already referred to the rise in the incidence of certain diseases that have been associated with the aging of our population and we have provided estimates of the costs of some of these diseases for the year 1961.¹ It has not been possible to estimate the impact of the aging structure of the population on total health expenditures but it is believed, in view of the magnitude of the percentage increase, that it has not been very substantial. There has also been a shift in the structure of the population in recent years to the very young who are also relatively heavy users of health services, but again the impact of this change on health services is not known.

The impact of total population increase on spending on health care can be seen in Table 11-15. Over the thirty-five year period 1926-1961, when expenditures on personal health services grew at a trend rate of 6.7 per cent,

¹ See also Chapter 5.

TABLE 11-12 EXPENDITURES ON PERSONAL HEALTH SERVICES IN CONSTANT (1957) DOLLARS, BY TYPE OF EXPENDITURE AND PERCENTAGE OF GROSS NATIONAL EXPENDITURE (GNE) AND TOTAL PERSONAL EXPENDITURES SPENT ON PERSONAL HEALTH SERVICES, CANADA, 1926-1961

Year	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Admin. Costs of Health Insurance	All Services	Percentage of Total Personal Expenditure	Percentage of GNE	Prescribed Drugs	Total Expenditures	Percentage of Total Personal Expenditure	Percentage of GNE
	\$'000,000								\$'000,000			
1926	104.9	21.6	169.7	44.1	6.1	346.4	5.1	3.45	—	—	—	—
1927	113.0	23.3	174.6	44.1	6.7	361.7	4.8	3.30	—	—	—	—
1928	119.4	25.4	174.6	49.8	6.9	376.1	4.5	3.14	—	—	—	—
1929	124.9	26.2	174.9	51.5	6.6	384.1	4.4	3.20	—	—	—	—
1930	114.6	24.9	177.0	44.9	7.0	368.4	4.4	3.32	—	—	—	—
1931	103.5	25.4	178.0	42.5	6.2	355.6	4.5	3.55	—	—	—	—
1932	77.7	20.8	170.0	32.3	5.4	306.2	4.2	3.40	—	—	—	—
1933	65.2	19.8	173.3	29.3	5.7	293.3	3.9	3.48	—	—	—	—
1934	63.5	20.1	193.1	27.6	6.2	310.5	4.1	3.29	—	—	—	—
1935	74.1	23.6	214.5	32.3	6.6	351.1	4.5	3.45	—	—	—	—
1936	75.2	24.0	232.2	34.0	7.3	372.7	4.5	3.51	—	—	—	—
1937	84.6	26.7	233.2	35.7	7.9	388.1	4.4	3.32	—	—	—	—
1938	93.0	29.4	247.1	35.7	8.7	413.9	4.8	3.51	—	—	—	—
1939	97.2	30.5	236.9	32.3	9.1	406.0	4.6	3.22	—	—	—	—
1940	107.0	33.0	267.9	39.1	9.3	456.3	4.8	3.16	—	—	—	—
1941	111.3	37.0	262.2	40.1	9.7	460.3	4.5	2.78	—	—	—	—
1942	114.3	35.2	269.1	39.8	10.5	468.9	4.5	2.39	—	—	—	—
1943	113.1	38.1	282.0	36.4	9.9	479.5	4.5	2.36	—	—	—	—
1944	105.5	41.3	305.1	36.7	13.4	502.0	4.4	2.38	—	—	—	—
1945	120.2	47.4	319.6	39.2	16.5	542.9	4.3	2.64	31.6	574.5	4.5	2.79
1946	134.1	56.8	347.5	43.9	21.4	603.7	4.3	2.99	36.5	640.2	4.6	3.17
1947	135.3	59.2	367.4	50.7	23.5	636.1	4.5	3.11	37.3	673.4	4.7	3.29
1948	139.2	58.8	384.0	49.4	24.7	656.1	4.7	3.15	37.8	693.9	5.0	3.33
1949	152.8	59.6	403.5	49.0	26.9	691.8	4.7	3.20	39.6	731.4	5.0	3.38
1950	174.5	62.5	431.2	51.0	29.5	748.7	4.8	3.24	42.6	791.3	5.1	3.42
1951	185.9	64.3	447.4	50.4	29.1	777.1	4.9	3.17	45.7	822.8	5.2	3.35
1952	193.1	66.8	471.3	49.4	31.9	812.5	4.8	3.06	49.0	861.5	5.1	3.25
1953	196.0	69.6	487.0	50.0	35.3	837.9	4.8	3.04	51.4	889.3	5.0	3.23
1954	204.4	74.5	517.0	54.2	38.4	888.5	4.9	3.33	54.5	943.0	5.2	3.53
1955	221.2	74.1	531.0	58.9	42.6	927.8	5.0	3.19	61.4	989.2	5.3	3.41
1956	250.7	87.0	560.7	67.9	41.3	1,007.6	5.1	3.20	73.5	1,081.1	5.5	3.43
1957	269.2	87.3	586.7	70.0	44.9	1,058.1	5.2	3.31	84.5	1,142.6	5.7	3.58
1958	279.8	93.7	617.6	80.5	49.4	1,121.0	5.4	3.47	87.4	1,208.4	5.8	3.74
1959	302.0	92.5	688.6	87.8	60.4	1,231.3	5.6	3.69	93.0	1,324.3	6.1	3.97
1960	324.0	100.3	757.2	96.0	62.1	1,339.6	6.0	3.92	96.4	1,436.0	6.4	4.21
1961	344.1	103.7	836.0	103.3	67.1	1,454.2	6.3	4.15	104.5	1,558.7	6.7	4.45

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 11-13 PER CAPITA EXPENDITURES ON PERSONAL HEALTH SERVICES IN CONSTANT AND PERCENTAGE OF GNE (1957) DOLLARS, BY TYPE OF EXPENDITURES, CANADA, 1926-1961

Year	Physicians' Services	Dentists' Services	Hospital Services	Other Health Services	Admin. Cost of Health Insurance	All Services	Percentage of Per Capita GNE	Prescribed Drugs	Total Expenditures	Percentage of Per Capita GNE
	\$							\$		
1926	11.10	2.29	17.95	4.67	0.65	36.65	3.45	—	—	—
1927	11.73	2.42	18.12	4.58	0.70	37.55	3.30	—	—	—
1928	12.14	2.58	17.74	5.06	0.70	38.21	3.14	—	—	—
1929	12.45	2.61	17.44	5.14	0.66	38.30	3.20	—	—	—
1930	11.23	2.44	17.34	4.40	0.69	36.09	3.32	—	—	—
1931	9.97	2.45	17.15	4.10	0.60	34.27	3.55	—	—	—
1932	7.39	1.98	16.17	3.07	0.51	29.13	3.40	—	—	—
1933	6.13	1.86	16.30	2.76	0.54	27.58	3.48	—	—	—
1934	5.91	1.87	17.98	2.57	0.58	28.91	3.29	—	—	—
1935	6.83	2.18	19.78	2.98	0.61	32.37	3.45	—	—	—
1936	6.87	2.19	21.21	3.11	0.67	34.05	3.51	—	—	—
1937	7.66	2.42	21.11	3.23	0.72	35.14	3.32	—	—	—
1938	8.34	2.64	22.16	3.20	0.78	37.11	3.51	—	—	—
1939	8.63	2.71	21.02	2.87	0.81	36.03	3.22	—	—	—
1940	9.40	2.90	23.54	3.44	0.82	40.10	3.16	—	—	—
1941	9.67	3.22	22.79	3.48	0.84	40.00	2.78	—	—	—
1942	9.81	3.02	23.09	3.42	0.90	40.24	2.39	—	—	—
1943	9.59	3.23	23.91	3.09	0.85	40.65	2.36	—	—	—
1944	8.83	3.46	25.54	3.07	1.12	42.02	2.38	—	—	—
1945	9.96	3.93	26.47	3.25	1.37	44.97	2.64	2.62	47.57	2.79
1946	10.91	4.62	28.27	3.57	1.74	49.11	2.99	2.97	52.08	3.17
1947	10.78	4.71	29.27	4.04	1.87	50.68	3.11	2.97	53.65	3.29
1948	10.86	4.59	29.94	3.85	1.93	51.16	3.15	2.93	54.09	3.33
1949	11.36	4.43	30.01	3.64	2.00	51.45	3.20	2.94	54.39	3.38
1950	12.73	4.56	31.45	3.72	2.15	54.59	3.24	3.11	57.70	3.42
1951	13.27	4.59	31.94	3.60	2.08	55.47	3.17	3.26	58.73	3.35
1952	13.36	4.62	32.59	3.42	2.21	56.19	3.06	3.39	59.58	3.25
1953	13.20	4.69	32.80	3.37	2.38	56.44	3.04	3.46	59.90	3.23
1954	13.37	4.87	33.82	3.54	2.51	58.11	3.33	3.56	61.67	3.53
1955	14.09	4.72	33.83	3.75	2.71	59.10	3.19	3.91	63.01	3.41
1956	15.59	5.41	34.87	4.22	2.57	62.66	3.20	4.57	67.23	3.43
1957	16.21	5.26	35.32	4.21	2.70	63.70	3.31	5.09	68.79	3.58
1958	16.38	5.49	36.16	4.71	2.89	65.63	3.47	5.12	70.75	3.74
1959	17.27	5.29	39.39	5.02	3.45	70.42	3.69	5.32	75.74	3.97
1960	18.13	5.61	42.37	5.37	3.48	74.96	3.92	5.40	80.36	4.21
1961	18.87	5.69	45.84	5.66	3.68	79.74	4.15	5.72	85.46	4.45

SOURCE: Table 11-12.

TABLE 11-14 TOTAL EXPENDITURES ON ALL HEALTH SERVICES AND HOSPITAL CAPITAL IN CONSTANT (1957) DOLLARS, CANADA, 1947-1961

Year	Personal Health Services*	General and Public Health Services	Total Health Expenditures	Percentage of GNE	Capital Expenditures on Hospitals	All Expenditures		Percentage of GNE
						Total Expenditures	Per Capita Expenditures	
	\$'000,000	\$'000,000	\$'000,000		\$'000,000	\$'000,000	\$	
1947	673.4	38.0	711.4	3.48	56.7	768.0	61.19	3.76
1948	693.9	49.0	742.9	3.57	85.4	828.3	64.59	3.98
1949	731.4	52.0	783.4	3.62	103.4	886.8	65.95	4.10
1950	791.3	55.0	846.3	3.66	100.8	947.1	69.07	4.10
1951	822.8	59.0	881.8	3.59	97.1	978.7	69.86	3.99
1952	861.5	64.0	925.5	3.49	106.1	1,031.6	71.34	3.89
1953	889.3	70.0	959.3	3.49	131.9	1,091.2	73.51	3.96
1954	943.0	71.0	1,014.0	3.80	133.0	1,147.0	75.03	4.29
1955	989.2	77.0	1,066.2	3.67	158.1	1,224.3	77.99	4.22
1956	1,081.1	79.0	1,160.1	3.68	132.7	1,292.8	80.39	4.10
1957	1,142.6	79.0	1,221.6	3.83	130.6	1,352.2	81.41	4.24
1958	1,208.4	84.0	1,292.4	4.00	158.0	1,450.4	84.92	4.49
1959	1,324.6	86.0	1,410.6	4.22	144.4	1,555.0	88.94	4.66
1960	1,436.1	90.0	1,526.1	4.47	145.2	1,671.3	93.53	4.89
1961	1,558.7	91.0	1,649.7	4.71	163.9	1,813.6	99.44	5.18

*Includes prescribed drugs.

SOURCE: Tables 11-4, 11-5 and 11-12.

population growth accounted for 1.9 percentage points—approximately 30 per cent of total growth. This, of course, is a sizeable contribution but its effect was most significant in the period before 1945 rather than in the post-war period. Thus in the years 1926-1944, when the trend rate of growth of total spending was 2 per cent a year, 1.3 percentage points (almost two-thirds of total growth) was attributable to population change. In the years 1945-1961, although population increase now accounted for 2.6 percentage points, it only accounted for about one-quarter of the total growth rate of 11.8 per cent.

Health Expenditures Per Person

Per capita expenditures on personal health services have increased rapidly over the whole period 1926 to 1961 both because average consumption has increased and because the prices of individual health services have risen. As noted in Table 11-2, over these thirty-five years the value of personal health services received by each Canadian rose fivefold from \$17.59 to \$88.41, while, if prescribed drugs are included, the sum amounted to \$94.52 in the latter year.

The propensity of individual Canadians to use increasing amounts of hospital care, physicians' and dentists' services, prescribed drugs and other health items each year has led to the growth of average per capita consumption of health services accounting for approximately the same proportion of the growth rate in the pre-war and post-war period (between 35 and 40 per cent). There has been, however, a striking increase in the consumption of health services after the war since, as shown in Table 11-17, in the period 1926-1944, the average Canadian received each year only 0.7 per cent more health services, while in the post-war period the annual average increase in *volume* of services amounted to 3.7 per cent. The output of the health services industry as well as real per capita consumption can be seen from an examination of Tables 11-12 and 11-13 which present the constant (1957) dollar or volume estimates for total and per capita consumption of various personal health services. Between 1926 and 1961 the total real output of the industry increased nearly fourfold from \$346 million to \$1,454 million, and per capita consumption rose from \$36.65 to \$79.74, indicating that the average Canadian more than doubled his consumption of personal health services during this period while his expenditures were increasing about fivefold. If prescribed drugs are included in personal consumption, total *real* output almost tripled in the post-war period rising from \$575 million to \$1,559 million, or to 4.4 per cent of GNE. In per capita terms, the increase was from \$47 to \$85. The inclusion of general and public health services,

along with capital expenditures on hospitals, as shown in Table 11-14 would raise total real health spending in 1961 to \$1.814 million or to 5.2 per cent of GNE. In per capita terms to \$99.44.¹

Prices of Health Services

Prices of health services, as seen from Tables 11-11 and 11-15, experienced little over-all change in the period 1926 to 1945, rising slowly to 1929, declining until 1934 and only achieving their previous peak, on the average at the end of World War II. From 1945 the prices of all health services have risen steadily and have accounted for about 5 percentage points of the total growth rate of personal health spending or almost 45 per cent. It is noteworthy though, that while the index of the prices of personal health services rose from around 50 in the immediate pre-depression period to 100 in 1957, the implicit price index for GNE also rose by approximately the same amount.

Although the average price of health services has risen rapidly, the rate of increase has been slowing down, particularly in the last few years, as is evident from Table 11-16. Over the period 1945-1949 to 1957-1961, in each five-year period the contribution of price increase to the growth rate of total spending on health services has diminished and the contribution of per capita consumption has tended to increase. In the years 1950-1954, of a total increase of 10.9 per cent a year, the rise due to price change was 5.7 percentage points. In the period 1957-1961, out of a total growth rate of 10.3 the rise due to price change was 2.5 percentage points.

We have examined the major factors that have influenced directly the growth of spending on health services and we have noted the changing significance of each of these over the past generation. Even without any change in prices or individual consumption, over the period 1926-61, total expenditures would have risen by almost 2 per cent each year as our population has grown, and combined with increasing per capital consumption, would have risen by 4.2 per cent a year. In the post-war period rising prices have, it is true, contributed heavily to the increase of spending, but population growth and higher per capita consumption together accounted for an average rise of 6.4 per cent a year, and, if prescribed drugs and public health services were included, the percentage would be even higher. Taking a long-run view, and in view of the subsidies to health, the increases in per capita consumption and price level of health services have not been substantially larger than for other types of consumption and other prices, a development which concentration on the post-war behaviour of health

¹ Although there is insufficient data to calculate real expenditures on research, health education and health education facilities, it is likely that the real outlays on these items in 1961 did not exceed \$20 million or the equivalent of 0.2 to 0.3 per cent of GNE and would not have changed the latter in any significant way.

spending tends to obscure. As can be seen from Table 11-17 the trend rates of growth of both per capita consumption and the prices of health services over the period 1926-1961 are fairly close to those for GNE and total personal spending, and it is the post-war experience that accounts for the difference.

TABLE 11-15 ESTIMATED CONTRIBUTIONS TO THE GROWTH RATE OF TOTAL SPENDING ON PERSONAL HEALTH SERVICES AND HOSPITAL CAPITAL, CANADA, SELECTED PERIODS, 1926-1961
(percentages)

Period	Population	Price	Per Capita Consumption	Total
Personal Health Services Excluding Prescribed Drugs				
1926-44.....	1.3	-0.1	0.8	2.0
1945-61.....	2.6	5.1	3.7	11.8
1926-61.....	1.9	2.4	2.3	6.7
Personal Health Services Including Prescribed Drugs				
1945-61.....	2.6	4.9	3.8	11.7
Total Expenditures on All Health Services				
1947-61.....	2.7	4.7	3.5	11.3

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 11-16 ESTIMATED CONTRIBUTIONS TO THE GROWTH RATE OF TOTAL SPENDING ON HEALTH SERVICES AND HOSPITAL CAPITAL, CANADA, SELECTED QUINQUENNIA, 1945-1961*
(percentages)

Period	Population	Price	Per Capita Consumption	Total
1945-49.....	2.7	7.4	5.4	16.3
1950-54.....	2.7	5.7	2.2	10.9
1955-59.....	2.7	3.9	3.5	10.4
1957-61.....	2.4	2.5	5.1	10.3
1945-61.....	2.6	4.9	3.9	11.8

*Includes estimated expenditures on public health services for the year 1945 not included in Table 11-18.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

EXPENDITURES ON INDIVIDUAL HEALTH SERVICES

What is true of total health expenditures is also true of spending on individual health services. Tables 11-1 and 11-9 show the varying rates at which expenditures on individual health services have increased over the period 1926-1961. Outlay on hospital services rose from \$52 million to \$924 million; physicians' services from \$65 million to \$383 million; dentists' services from \$19 million to \$119 million; other services from \$27 million to \$115 million and the administrative costs of health insurance from \$3 million to \$72 million. Between 1945 and 1961 expenditures on prescribed drugs¹ rose from roughly \$23 million to \$111 million while from 1947 to 1961, public health expenditures increased from \$21 million to \$105 million. Expenditures for the administrative costs of health insurance and for hospital services grew the most rapidly, over eight per cent each year, expenditures on physicians' and dentists' services grew at a somewhat lesser rate, a little more than five per cent a year, while other expenditures grew at a rate of slightly more than four per cent.

There were, of course, fluctuations around the long-term trend of spending on various services. Expenditures on physicians' services rose to \$77 million in 1929 but fell to less than half this amount by 1934, and did not surpass the previous peak expenditure until 1946, 17 years later. Expenditures on dental and other health services fell by about 50 per cent during the depression and expenditures on dentists' services regained their previous peak level by 1943, expenditures on other health services did not reach this level until 1947. Expenditures on hospital services declined but slightly in the depression period, quickly recovered and surpassed their previous peak level in 1934. Since the end of the war spending on all health services increased at a rapid rate. Table 11-9 also provides evidence relating to the differing trend rates of growth in the various sub-periods. Thus in both the pre-war and post-war periods, hospital expenditures and the administrative costs of health insurance grew the most rapidly, while expenditures on physicians' services and dentists' services have experienced a rapid rate of increase only in the post-war period.

These changes in the rate of growth of expenditures on individual health services have not been the same for all health items, and this has been reflected in the changing pattern of consumer expenditures on health services (see Table 11-3). In 1926, physicians' services accounted for the largest share of the consumer dollar (39 per cent) followed by hospital services (31

¹ Prescribed drugs as shown in Tables 11-1 and 11-9 cover pharmaceuticals purchased on a physician's prescription from retail outlets. Thus the data exclude prescribed drugs supplied in hospitals, by other institutions and by physicians directly. Hence these data on prescribed drugs referred to above cover a smaller area of prescribed drugs than the estimates presented in Chapter 9 which relate to *all* prescribed drugs.

per cent), other services (16 per cent), dentists' services (12 per cent), and the administrative costs of health and sickness insurance (two per cent). Between 1930 and 1934 the percentage of the consumer dollar spent on medical, dental and other health services fell from 66 per cent to 50 per cent and hospital expenditures rose to 48 per cent. There was a slight reversal of this trend in the period 1935-42 when expenditures on physicians' and dentists' services expanded more rapidly than hospital expenditures, but from that date down to 1954 the proportion of the consumer dollar going to physicians' services contracted, while the proportion going to hospital services expanded. By 1954, hospital expenditures accounted for almost 57 per cent of expenditures as against 24 per cent for physicians' services. The contraction of spending was also marked in dentists' and other services which had declined to 8.4 per cent and 6.3 per cent respectively in 1954.

In 1954 this long-term shift was temporarily reversed but resumed again in 1959, and by 1961 hospital expenditures accounted for 57.3 per cent of total spending on personal health services, and physicians' services

TABLE 11-17 AVERAGE ANNUAL PERCENTAGE CHANGES IN EXPENDITURES ON PERSONAL HEALTH SERVICES, TOTAL PERSONAL EXPENDITURES AND GROSS NATIONAL EXPENDITURES IN CURRENT AND CONSTANT (1957) DOLLARS, CANADA, SELECTED PERIODS, 1926-1961

Period	Expenditures on Personal Health Services*				Total Personal Expenditures			
	Total Expenditures		Per Capita Expenditures		Total Expenditures		Per Capita Expenditures	
	Current Dollars	Constant (1957) Dollars	Current Dollars	Constant (1957) Dollars	Current Dollars	Constant (1957) Dollars	Current Dollars	Constant (1957) Dollars
1926-29	5.1	3.5	3.0	1.5	9.2	8.9	7.2	5.1
1930-34	-9.2	-4.3	-10.7	-5.7	-8.2	-2.8	-3.5	-4.1
1935-39	4.8	3.6	3.8	2.7	4.5	3.0	3.6	2.4
1940-44	4.6	2.4	3.3	1.2	8.7	4.5	7.4	3.4
1945-49	14.7	6.2	11.5	3.4	11.9	3.7	8.9	0.9
1950-54	10.6	4.4	7.5	1.6	7.6	3.8	4.7	1.0
1955-59	11.6	7.3	8.6	4.5	6.7	4.3	3.8	1.5
1957-61	11.1	8.2	8.5	5.8	5.1	3.5	2.6	1.3
1926-44	2.0	2.1	0.7	0.7	3.2	2.9	2.0	1.6
1945-61	11.8	6.3	9.0	3.7	8.3	3.9	4.5	1.3
1926-61	6.7	4.1	4.7	2.2	5.7	3.5	3.8	1.6

* Excludes prescribed drugs.

TABLE 11-17 AVERAGE ANNUAL PERCENTAGE CHANGES IN EXPENDITURES ON PERSONAL HEALTH SERVICES, TOTAL PERSONAL EXPENDITURES AND GROSS NATIONAL EXPENDITURES IN CURRENT AND CONSTANT (1957) DOLLARS, CANADA, SELECTED PERIODS, 1926-1961—Concluded

Period	Gross National Expenditure			
	Total Expenditures		Per Capita Expenditures	
	Current Dollars	Constant (1957) Dollars	Current Dollars	Constant (1957) Dollars
1926-29	6.0	6.1	3.9	4.0
1930-34	-9.5	-4.8	-10.9	-6.4
1935-39	6.9	5.6	5.8	4.6
1940-44	15.1	9.9	13.8	8.5
1945-49	8.4	1.3	5.4	-1.4
1950-54	8.4	3.6	5.3	1.0
1955-59	6.5	3.4	3.1	0.8
1957-61	3.9	2.2	1.6	0.0
1926-44	4.7	4.2	3.4	2.8
1945-61	7.4	3.4	4.7	1.1
1926-61	5.8	3.7	3.9	1.7

SOURCE: Based on Tables 11-1 and 11-12; and Dominion Bureau of Statistics, *National Accounts, Income and Expenditure*, 1926-1962, Ottawa: Queen's Printer.

23.8 per cent. If prescribed drugs are included in total expenditures, in 1961 these amounted to 6.5 per cent of total spending while hospital expenditures amounted to 53.6 per cent and expenditures on physicians' services to 22.2 per cent. The growing percentage allocated to hospital care reflects the important role of hospitals in modern medical practice as well as the introduction of the National Hospital Insurance Programme which enabled many Canadians to obtain hospital care not previously available.

Health Resources and Health Spending

We have already referred to the continued increase in spending on health services when expenditures on certain other services have tended to slow down and we have attributed this development partly to the special factors that have affected the demand for health services. It must also be recognized that the behaviour of the supply of health services, through its effect on the price of health services, has influenced the rate of increase in

total spending. In the face of a sustained high demand for health care, the price of individual health services has depended on the ease with which the supply of particular health personnel and capital equipment could be expanded and the possibility of making more effective use of existing health resources.

Generally speaking, as long as supply can expand at the same rate as demand, the prices of services will tend to change but little, and per capita spending on health services would increase mainly as personal consumption rose. If supply tends to lag behind demand, then providing there are no price controls or rationing by queues, prices are likely to rise sufficiently to allocate these scarce resources amongst all those who wish to obtain them. Given the length of time it takes to expand the supply of professional personnel and the stock of capital of the health industry, it is not then surprising that the prices of health services and thus expenditures on health services tend to rise even more rapidly when demand is also growing rapidly.

We turn now to an examination of the variations in price and per capita consumption of individual health services. Bearing in mind the limitations of the data particularly for the pre-war period, it appears from Table 11-18 that per capita consumption of hospital care increased between 1926 and 1944 while per capita expenditures in real terms on medical and other health services declined. Per capita consumption of dental services appears to have increased though the extent may be less than the data indicate because of the limited statistics available on prices of dental services. The increased consumption of hospital services amounted to about 2 per cent a year while the decrease in consumption of medical services was of the order of 1.3 per cent a year. In the post-war period, the per capita consumption of all services has risen substantially with prescribed drugs increasing at about 5 per cent a year, medical services about 4 per cent, hospital and other services about 3.5 per cent and dental services about 2.2 per cent.

Except for hospital care which rose by 1.2 per cent and dentists' services which fell by 2.1 per cent, the prices of health services showed little over-all change in the period 1926-44. In the post-war period, the price of hospital services has risen the most rapidly at around an annual average rate of 6.5 per cent a year, while prices of dentists' services have increased at a trend rate of 3.9 per cent, prices of physicians' services around 3.5 per cent and prices of prescribed drugs around 2.3 per cent. Since the trend rate of growth of the prices of all services has risen at a rate of 3.9 per cent a year in the post-war period, the price of government services (as measured by the increase in price of the goods and services purchased by governments) by 4.6 per cent, and the price of capital goods by 4.9 per cent, it is evident that

TABLE 11-18 ESTIMATED CONTRIBUTION TO THE GROWTH RATE OF SPENDING ON SELECTED ITEMS OF HEALTH CARE, CANADA, SELECTED PERIODS, 1926-1961
(percentages)

Period	Population Change	Price Change	Per Capita Real Consumption	Total Growth Rate
Physicians' Services				
1926-44.....	1.3	0.1	-1.3	0.1
1945-61.....	2.6	3.5	4.1	10.6
1926-61.....	1.9	1.7	1.5	5.2
1945-49.....	2.7	4.8	3.4	11.3
1950-54.....	2.8	4.4	1.3	8.7
1955-59.....	2.7	3.7	5.3	12.1
1957-61.....	2.4	2.6	3.9	9.2
Dentists' Services				
1926-44.....	1.3	-2.1	2.3	1.5
1945-61.....	2.6	3.9	2.2	9.0
1926-61.....	1.9	0.7	2.6	5.3
1945-49.....	2.7	3.2	3.7	9.9
1950-54.....	2.8	4.5	2.9	9.3
1955-59.....	2.7	3.9	3.0	9.9
1957-61.....	2.4	3.4	2.0	8.0
Hospital Services				
1926-44.....	1.3	1.2	1.9	4.5
1945-61.....	2.6	6.5	3.4	13.0
1926-61.....	1.9	3.7	2.7	8.5
1945-49.....	2.7	10.8	3.4	17.7
1950-54.....	2.8	7.2	1.8	12.2
1955-59.....	2.7	4.3	3.8	11.2
1957-61.....	2.4	2.6	6.6	12.0
Other Health Services				
1926-44.....	1.3	0.1	-2.3	-0.9
1945-61.....	2.6	3.5	3.6	10.0
1926-61.....	1.9	1.7	0.6	4.2
Prescribed Drugs				
1945-61.....	2.6	2.3	5.0	10.2
1957-61.....	2.4	1.6	3.1	7.2
General and Public Health				
1947-61.....	2.7	5.1	3.0	11.2
Capital Construction of Hospitals				
1926-44.....	1.3	—	—	—
1945-61.....	2.6	5.0	5.8	13.9
1926-61.....	1.9	—	—	—

SOURCE: Based on Tables 11-1, 11-4, 11-5, 11-9 and 11-11.

the prices of health services, except for hospital services, have increased no more rapidly than the prices of a great many other goods and services (Table 11-11).

Moreover, although the rate of increase in expenditures on individual health services has been high because of population growth, price change and increased per capita consumption, increasingly it has been the last factor that has tended to hold the growth rate at a high level (Table 11-18). The rate of increase in price has slackened off so that hospital prices which increased by about 11 per cent a year in the quinquennium 1945-49, by 1957-61 were rising at a rate of only 2.6 per cent. Prices of physicians' services too experienced a slowing down in the rate of growth from 4.8 per cent a year to 2.6 per cent while prices of dentists' services, which had not increased as rapidly in the immediate post-war years, continued to rise at about the same trend rate of 3.4 per cent. The growing importance of per capita consumption is indicated for most health services, with the increase being most marked in the consumption of hospital services, which rose from 3.4 to 6.6 per cent; and followed by physicians' services, 3.4 per cent to 3.9 per cent. Only dentists' services appear to have experienced a slowing down in the rate of increase in consumption from the immediate post-war period, from 3.7 per cent to 2 per cent a year.

Physicians and the Supply of Medical Services

The changes in the trend rate of growth of per capita consumption, given the growth of demand for health services generally, has been related to a large extent to the supply of health capital and personnel. For example, the consumption of almost all hospital services, prescribed drugs and medical services depends on the supply of physicians and their productivity. In the immediate post-war period, the accelerated medical course introduced during the war, along with the return of physicians from the Armed Forces to civilian life increased the supply of physicians and permitted an increase in per capita consumption of medical services despite a growing population. Since that time three other factors have enabled an expansion of physicians' services. The first was the influx of veterans into medical schools that enlarged the supply in the early nineteen fifties. The second has been the substantial number of immigrant physicians that have come to Canada since the mid nineteen fifties and which has more than offset the number of physicians moving to the United States.¹ The third has been the increased output of individual physicians and the longer hours worked by physicians.

The growth of the supply of physicians is evident in that their number increased by one-third between 1951 and 1961, and the physician-

¹ See also Chapter 7.

population ratio fell from 976 persons per physician to 869 persons per physician between 1951 and 1961. It has also been presented to us that compared with the pre-war period physicians now work longer hours on the average with a consequent increase in the volume of medical services provided by practising physicians per year. Equally important, it appears, has been the increased productivity of physicians arising from the change in the character of practice with greater emphasis on office or hospital calls and relatively lesser numbers of house calls. This trend has been facilitated by the greater use of cars by patients, increasing consultation by telephone and the improvement in health services made possible by the utilization of a large quantity of modern equipment and specialist personnel in the diagnosis and treatment of illness. Although the physician remains largely self-employed he has increased his productivity by expanding the use of nursing and non-professional staff in his office practice. However, he is almost unique in our society in that he has access to very large amounts of human and physical capital in hospitals, little of which he has to provide himself but which is provided by society at large. There are exceptions to this in group practice and private radiological clinics but these are still relatively few in number in Canada and the productivity of physicians has been substantially increased through their access to hospital facilities. Physicians can now see more patients each year, perform more operations, provide more diagnostic services; in sum to provide a growing number of Canadians with more medical care each year.

The data presented in Table 11-19 support this statement. The most significant point brought out by the estimates is the trend, the index of output per physician.¹ Since in 1931 physicians were working at less than full capacity, part of the increased output of the late nineteen thirties and early nineteen forties was the consequence of utilizing more fully the time of professionals. Since then output per physician has continued to rise as technical and organizational improvements produced their effects.

Dentists and the Supply of Dental Services

We have noted that the volume of dental services has increased less than either medical or hospital services. This is primarily due to the failure of the supply of dentists to keep up with population growth, which in turn was the consequence of a slow rate of increase in the output of Canadian dental schools and a very low rate of immigration of dentists into Canada.² As an offset, as indicated in Table 11-19, productivity of individual dentists has been rising as practitioners use larger amounts of capital equipment, new

¹ The estimates for the early period are based on partial data. They are more useful to reflect trends than the absolute quantities involved.

² See also Chapter 7.

TABLE 11-19 ESTIMATED PRODUCTIVITY OF PHYSICIANS AND DENTISTS, SELECTED YEARS, CANADA, 1931-1961

Year	Physicians				Dentists			
	Number of Physicians*	Real Output	Output per Physician	Index Number	Number of Dentists	Real Output	Output per Dentist	Index Number
		millions of constant (1957) dollars	constant (1957) dollars			millions of constant (1957) dollars	constant (1957) dollars	
1931	8,160	103.5	12,683	100	4,039	25.4	6,288	100
1941	8,900	111.3	12,505	98	4,210	37.0	8,809	140
1951	10,750	185.9	17,293	136	4,912	64.3	13,090	208
1961	15,550	344.1	22,200	175	5,865	103.7	17,681	281

* Estimated number of physicians providing personal health services. Includes part-time private practice and salaried physicians, but excludes physicians engaged in public health administration, etc.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

material, and new techniques. Further, the skills of dental assistants, dental technicians and other personnel have enabled dentists to increase further their productivity even though the practice of dentistry is primarily an office practice.

Supply of Hospital Services

The consumption of hospital services similarly has been facilitated by a rapid expansion in the supply of hospital beds. In the immediate post-war period not all hospital beds were fully utilized as can be seen from the occupancy rates of that period and, as a consequence, the growing demand for hospital care could be met, to some extent, from this unused capacity. Capacity was also increased as a consequence of the decline in the length of stay of the average patient which fell somewhat over the pre-war and early post-war period. This decline in the length of stay ceased in the nineteen fifties. New construction and the rehabilitation of older hospitals also made available increasing numbers of hospital beds. The consequence of this growth in the capital stock has been that the total volume of hospital care has risen steadily as has per capita consumption.¹

¹ See Chapter 8. From 1948 to 1961, admissions to hospital per 1,000 persons increased from 111 to 149, while days of care per 1,000 persons rose from 1,318 to 1,678.

At the same time, technical and scientific advances made it possible for hospital patients to use more diagnostic, radiological and laboratory services, new surgical techniques, highly effective rehabilitation services and social services. All of these developments increased the productivity of hospitals in terms of ability to save patients and to reduce periods of morbidity, but they all involved an increase in the supply of specialist facilities and professional and semi-professional personnel. The modern Canadian hospital has expanded to supply all of these facilities and consumers have been able to increase not only their consumption of hospital care in real terms, but more services within each day of care. Similarly the supply of professional nurses, auxiliary nurses, laboratory technicians, physical therapists to name but a few, has grown at a rate sufficient to make possible the increased consumption of all of these specialist services. Between 1948 and 1960, the ratio of total hospital personnel to patients rose from 1.27 to 2.01.

Because the number of personnel employed in hospitals relative to the number of patients treated has risen does not mean that hospital productivity has fallen. As we have noted, individual patients, on the average now obtain more services during an average stay and this alone would require more personnel for each patient. Nor should it be forgotten that the growth of the supply of hospital capital, both human and physical, has taken place, in part, in response to the need to increase the productivity of physicians. The relatively long period it takes to train a physician in this day of specialization has made it necessary to economize on these scarce and expensive skills. As has happened in so many occupations, this has been brought about by the increasing use of equipment and paramedical personnel. In the health services industry this has meant the concentration of care in hospital (and to a lesser extent in physicians' offices) where capital and personnel are available. The shift in spending by the consumer from physicians to hospital services that we have already identified was brought about by the medical profession itself as it attempted to meet the demands of consumers and to apply the results of scientific and technical advances in medicine and allied sciences.

Prescribed Drugs and Other Health Items

What has been said about medical, dental, and hospital care is also true to a significant extent for prescription drugs and other health items. The consumption of these health services has risen, and with this increased consumption has gone increased spending. On the other hand, productivity increases have tended to limit price increases in the face of growing demand. Scientific and technical progress in the mass production of antibiotics and other drugs has made it possible for Canadians to consume a greater variety and amount of prescription drugs than would have been possible if such

developments had been more limited. The spread of health insurance has led to increased outlays for the administration of public and private health insurance plans. While limited statistical information makes it difficult to measure productivity in this area it has been presented to us that the growing use of data-processing equipment has held down the costs of administering health programmes.

Increased employment of capital equipment and skilled personnel appears to have increased productivity in the prescribing and manufacture of spectacles, in the work of chiropractors and osteopaths and the manufacture of prosthetic devices. Greater use of the automobile and the telephone has improved the productivity of home nursing organizations. In all of these examples increases in the price of health services have been less than they would have been because of the gain in productivity.

Expansion of Health Resources

We have been impressed with the success achieved through the co-operation of governments, industry, the professions and the general public in expanding the supply of health services. It is true that the prices of health services have risen in the process but the rate of increase in price has slowed down in response to the expanded supply. And this decline would have been more marked if it had not been for the spread of physicians and hospital insurance to new groups and the coverage of items not previously insured, particularly for the aged, the chronically ill and the pregnant. Indeed the increases in price that have taken place have performed an extremely useful function that is often overlooked. They have called forth an expanded output of health services both by attracting more labour into this particular industry as well as offering an incentive to develop and apply new techniques for increasing productivity. Without higher prices for health services, whether these were a day of hospital care, an operation, or a visit to a physician's or dentist's office, it would have been difficult to hold, and still more difficult to attract, the personnel needed to staff the hospitals, clinics, physicians' and dentists' offices. In this sense, the rising prices of health services have been largely demand-induced rather than cost-induced. Rising incomes and the stimulus provided by the growth of public and private insurance, along with public subsidies, have generated a continuously expanding demand for medical and hospital services. Moreover, the transfer of a major part of the direct cost of hospital care from the individual to society, largely through the substitution of taxes for direct payment, has permitted the purchase of other health services—the provision of a more comprehensive set of benefits—or the consumption of more medical and other health services. This trend in

the growth of demand in turn caused prices to rise which effectively attracted additional resources into the industry.

The evidence suggests that it has been largely the growth of demand for more and better quality hospital care and a willingness to spend increasing amounts of money for health services that has made it possible for hospitals to raise salaries and generally improve working conditions by providing a 40-hour week, holidays with pay and fringe benefits such as pension programmes and prepaid health care. Without these improvements hospitals would not have been able to attract the better educated and more qualified personnel required to provide the better health care demanded. The relative attractiveness of opportunities in the United States or Great Britain for health personnel, as well as other occupations such as teaching or secretarial work for prospective health professionals and industrial employment for other personnel would have made it impossible to hold staff, to attract trained personnel from Europe or new entrants into the industry. Wage increases occur most frequently in industries where productivity is rising and where the demand for output remains at a high level. The hospital industry is very much of this nature. What we have said about hospital personnel is also true of medical and dental personnel. In order to attract physicians from Europe, or to hold Canadian physicians and dentists at home, and to attract students into professions where the qualifications necessitate a long period of difficult education, it has been necessary to offer incomes that will compensate for the investment in human capital and which are at least close to what might be earned elsewhere. In the face of a rapidly growing demand the price of health services has risen. But the rise in price has been limited by the expansion of the supply of human and physical capital and scientific, technological and organizational innovation that has substantially increased productivity.

Here again we must emphasize the contribution of Canadians through public action to this development. Just as governments have subsidized the demand for health services, so have they also subsidized the expansion of supply of health personnel and facilities. The supply of hospital beds for the mentally ill and the retarded, along with beds for tuberculous patients, has been built almost entirely from public funds while a sizeable proportion of the cost of building and equipping active treatment hospitals has also been financed in this way. Again, although it costs the individual a substantial sum of money in out-of-pocket costs and foregone earnings—to finance a medical or dental education—or for that matter, a nursing or other health professional education, public funds have been used to subsidize this education, particularly in those areas where health grants have been available. Tax remissions for citizens who provide funds for the building of hospitals, medical schools

or education in the health professions have also stimulated the provision of health resources.

The Sequence: Increased Demand, Increased Prices and Increased Supply

We have examined the major categories of personal health expenditures and we have found that they all have gone through much the same experience: increased demand, increased price and finally an increase in supply with a slowing down in the rate of price increase. The continued high level of demand has created an upward pressure on prices that has persisted up to the present, despite the growth of the supply of health facilities and capital. The consequence has been that health prices, and thus health expenditures, have continued to rise when other prices and categories of spending have risen much more slowly or not risen at all.

But, as we have already emphasized, this continued pressure of demand will eventually slacken off when a new plateau is reached consequent on the elimination of the backlog of unsatisfied needs for hospital care for the chronically ill and the aged, and ultimately the relative shortage of skilled personnel will tend to disappear. Partly, the continued increase in the productivity of health personnel and capital which has helped to make possible the great expansion of output with limited equipment and personnel should continue to make this contribution in the future, though more likely at a declining rate unless some new technological or scientific breakthrough similar to the development of drugs for the treatment of tuberculosis takes place. Unlike the production of many other goods, or services, technical innovation in the health industry is both capital- and labour-using and the industry requires, and will continue to require, large numbers of highly trained professional personnel. The recent developments in human engineering such as the transplanting of organs and the development of engineering systems that take over the functions of the body all require very large numbers of highly skilled personnel. For the most highly trained, the specialist physician, the period of advanced education may extend as long as ten to twelve years while registered nurses now require three years of training beyond the high school level. It is true that a nurse's aid can be trained in less than one year, but since human lives are at stake it may be that the consequence of diluting the professional bedside nursing staff has been an increase in supervisory nursing staff to ensure that the quality of nursing care is maintained. The immigration of trained personnel can offset these short-term scarcities to some extent, but this supply depends not only on the possibilities of attracting well qualified personnel from other countries but also on the

time required to fit new arrivals into the pattern of health care provided in Canada,¹ the improvement of incomes and working conditions in the United States of America and Europe relative to Canada.

This brings us to one of the main points of our analysis. If the quality of care depends on professional staff, and professional staff are scarce and take a long time to produce, then it follows that if no restraints are placed upon prices and demand is subsidized, prices of services will rise and likely rise for a long period of time. This, of course, has been the recent trend in higher education. Where it has been impossible or difficult to substitute machines for man, where qualified teachers are scarce and where the demand for education is subsidized by making it available free or at a very low cost, then teachers' salaries have risen rapidly. On the other hand, higher salaries have attracted large numbers of students in teaching careers so that today the scarcity of elementary school teachers in many areas is ended, and qualified high school teachers are less scarce than a decade ago. The most pressing scarcity today is at the university level and in consequence salaries of professional staff have been rising rapidly. Yet the last few years have seen the supply of graduate students begin to expand under the impetus of the growth in population, public assistance to university development and the availability of scholarships, and in a decade or so even the shortage of university professors may well be reduced to manageable dimensions.

As long as quality of staff is significant in the provision of any services, as long as quality is a function of higher education, and as long as demand is subsidized, the prices of such services will rise, and likely more rapidly than those of most other goods and services. The prices of services, however, affect the incomes of suppliers of services, and the higher incomes ultimately will draw more people into these professions. Since eventually even the demand for any single subsidized service will level off and grow at a rate determined largely by population growth and the speed with which research and technology make it attractive for consumers to use it, in the long run the prices of health services are unlikely to rise significantly more rapidly than prices in general.

Providing the necessary educational facilities, e.g., medical schools, dental schools and nursing schools, etc., and the staff to man them are available, the personnel needed to provide services ultimately will be forthcoming at prices that are reasonably consistent with the amount of human capital they embody. In the case of personnel with many years of training this price must necessarily be high to yield a reasonable rate of return on investment and attract a sufficient number into the profession.

¹ See also Chapter 7.

Health Expenditures by Public Authorities

In estimating the expenditures for health services provided directly by public authorities we are concerned here only with expenditures for general and public health since public provision of, or expenditures on, hospital, medical, dental and nursing care along with prescribed drugs has already been included with estimated expenditures on these particular items. As shown in Table 11-4 expenditures rose from \$21 million in 1947 to \$105 million in 1961 while per capita expenditures rose from \$1.67 to \$5.76.¹ As a proportion of GNE, these expenditures have remained small rising from 0.16 per cent in 1947 to 0.29 per cent in 1961. Even when expenditures for municipal sanitation are included—these amounted to \$166 million in 1961—total outlays barely amounted to 0.6 per cent of GNE.

During this period as shown in Table 11-18, the growth rate of spending on public health rose at a trend of 11.2 per cent a year. Of this, population growth accounted for 2.7 percentage points, price increases for 5.1 percentage points, and per capita consumption for 3.0 percentage points. As with other health expenditures the trend rate of growth has been slowing down in recent years, amounting only to 7.4 per cent during the period 1957-61. There are indications that price increases still account for part of the growth rate but since there are no direct measures of the change in price of government services this cannot be fully demonstrated.

Expenditures on Medical Research

The rapid spread of research in the field of medicine and drugs has been almost the major characteristic of the health industry in the past thirty years and the pay-off in terms of lives saved and individuals restored to health in many individual projects has been substantial. It is only necessary to recognize the results that flowed from the discovery of such things as insulin, penicillin or polio vaccine compared to the costs of discovery and development to be aware that the return to investment in research can be substantial. Canadian contributions to the development of new knowledge since the discovery of insulin have not been unsubstantial considering the effects involved and sums of money spent. In addition there have been supplementary benefits in the form of strengthened teaching departments.

Expenditures on medical research in Canada, while still absolutely small, compared to a country like the United States, have been rising rapidly in recent years. In 1961, expenditures on medical research are estimated to

¹ Includes some outlays for medical research and education of health personnel made under the National Health Grants.

be \$12 million. About 70 per cent of this amount came from the Federal Government, something less than ten per cent from the United States National Institute of Health and the remainder from provincial governments, voluntary agencies and foundations. Since the Federal Government provides the bulk of research funds, the trend in the growth rate of such funds is an indication of how rapidly health research expenditures have been growing. Thus in 1946-47, federal support for extra-mural research amounted to \$158,000. In 1962-63 this had increased to \$8.3 million.¹

Expenditures on Hospital Capital

Although information relating to the value of health capital is limited, some rough estimates can be made on the basis of the data reported by public general hospitals to the Dominion Bureau of Statistics, and other information. It is estimated that the depreciated value of hospital capital in 1960 amounted to at least \$1,500 million while the replacement value was likely of the order of \$2,500 million. In addition, substantial amounts have been invested in medical and dental buildings, private radiological clinics and laboratories, pharmacies, medical and dental schools and government health facilities for which no separate information is at present available.

We have already referred to the growth of the stock of hospitals along with their associated diagnostic, research teaching and residential facilities and Table 11-5 indicates the current and constant (1957) dollar value of gross investment in hospitals and associated facilities. The value of construction has increased sharply in the post-war period rising from \$22 million in 1945 to \$178 million in 1961 and then to \$213 million in 1963. As a percentage of GNE, capital investment in hospitals rose from 0.19 in 1945 to 0.44 per cent in 1949 and has fluctuated around that ratio since that date. With the introduction of the national Hospital Insurance Programme the absolute amounts spent on hospital construction have risen but the percentage of GNE devoted to construction has, on the average, tended to decline from the high rate of the 1953-55 period, with a peak of 0.54 in 1955.

Over the post-war period, the trend rate of growth of expenditures on hospital construction has been 13.9 per cent a year. Of this, 2.6 percentage points can be attributed to population increase, 5 percentage points to increased prices and 5.8 percentage points to increased hospital capital

¹ Research expenditures on ethical drugs carried out by the pharmaceutical industry are included in expenditures on prescribed drugs.

per person. The pattern of consumption and price rises, therefore, has not been significantly different from other health spending.

Expenditures on Educating Health Personnel

An assessment of the total expenditures made for the education of health personnel involves many conceptual and statistical problems.¹ Many outlays for the education of health personnel are made as part of the provision of general education and are thus not included in the health budget. In other cases educational expenditures are an integral part of other categories of spending such as hospital expenditures. In this study nursing education is included with hospital expenditures and in part is offset by services rendered by nurses in training. Hospital expenditures also include outlays for medical education. Some post-graduate medical education is included under the heading of medical research expenditures. Taking account of the limitation of data, our analysis is based on estimates of the costs of educating health personnel contributed directly by governments. And even here, the only adequate data obtainable, were outlays made under the National Health Grants which in 1961 amounted to \$3.7 million.²

Total Health Spending

If we include expenditures on research, public health, grants-in-aid of education and health capital in order to arrive at an aggregate of all health spending, Table 11-7 shows that in 1961 Canadians spent a little over \$2 billion on health services or an average of almost \$111 per person. This was the equivalent of 5.4 per cent of GNE.³

We have also included an estimate of expenditures on non-prescribed drugs and pharmaceuticals in this table since from the point of view of the consumer these may be considered as a health outlay. In 1961 such expenditures amounted to approximately \$210 million.⁴ Hence the total amount spent on health would be increased to approximately \$2.23 billion or \$122 per capita, the equivalent of about 6 per cent of GNE.

¹ Statistics on education of health personnel are incomplete and particularly inadequate for an up-to-date assessment of what is being done in this field, what the gaps are and how they can be filled. We point to this inadequacy in the hope that the government departments concerned would endeavour to fill this gap in statistical knowledge on a current and continuing basis so as to enable decision-makers to arrive at reasonable conclusions as to the future requirements on the basis of factual knowledge of the past and the present.

² Some statistics relating to the sources of funds for the financing of undergraduate education of physicians, dentists and pharmacists is to be found in the report prepared by the Dominion Bureau of Statistics, *University Student Expenditure and Income in Canada, 1961-62*, Part II—Canadian Undergraduate Students, Ottawa: Queen's Printer, 1963.

³ Estimated expenditures on health exclude a small amount for prescribed drugs supplied in residential institutions such as homes for the aged. The addition of this sum, which is at present not known, would be unlikely to change this percentage of GNE.

⁴ See also Chapter 9.

SOURCES OF FUNDS FOR HEALTH EXPENDITURES

Methods of Financing

As we have already emphasized there is a distinction between a nationalized industry and an industry from which governments, acting on behalf of their citizens, buy a substantial part of its output. This is evident if we consider the defence industry. Here all of the output of the industry is used by government, but a substantial proportion is produced not by governments, not by a nationalized industry, but by private corporations and then sold to the government. The same can be said to a greater or lesser extent for the construction industry, the transportation industry and numerous other industries including the health industry. Governments, acting on behalf of their citizens, directly provide hospital and medical services for the Armed Forces, Indians, veterans, tuberculous and mental patients but by far the largest proportion of such services are not produced by governments but purchased from institutions such as community hospitals, physicians, dentists, pharmacists and others. We are concerned then, not with the direct provision of health services in Canada, but with the sources of funds for the financing of expenditures on such services.

The financing of health services has always been the responsibility of individual Canadians since they are the ultimate sources of funds. Here though, we wish to distinguish between the public financing of health services and private financing either by individuals or by private insurance programmes. Until the twentieth century the purchase of health services had been predominantly the responsibility of individual Canadians since neither government spending nor private insurance programmes were significant. Before World War I, total expenditures on health amounted to considerably less than one-half of one per cent of Gross National Expenditure. During the nineteen thirties, in the depression, large outlays on relief and social welfare became necessary, and by the year 1943 it is estimated that government expenditures for hospital and medical care, along with general public health, amounted to roughly \$45 million or the equivalent of 18 per cent of total expenditures on personal health services in that year.¹ The greater part of this expenditure was for hospital care, particularly for hospital care for the mentally ill and tuberculous and the proportion of outlays for hospital care met by government is estimated to have exceeded 35 per cent in that year.

¹ Based upon Health, Welfare and Labour, Reference Book for Dominion-Provincial Conference on Reconstruction, 1945, *passim*.

Private and Public Health Expenditures

Since the war there has been an increase in the proportion of expenditures on health services that has been financed through the public sector. Much of this spending would have taken place in any event with the progress which Canadians have made in improving methods of providing health care. We have recognized that public programmes do stimulate the demand for health services, but many expenditures now financed by governments are merely a transfer of expenditures from the private to the public sector involving outlays that would have been made in any event. The channelling of funds to finance a comprehensive personal health care programme sponsored by governments is likely to lead to greater health expenditures than would otherwise be the case. To a large degree though the change is merely the substitution of public payment for private payment and to that extent no new net expenditure is involved.

The sources of funds for expenditures on hospital services in the post-war period are shown in Table 11-20. The proportion of expenditures provided by the public sector of the economy continued to rise in this period and reached nearly 50 per cent by 1950. In the mid nineteen fifties public expenditures appeared to have levelled off at around 55 per cent but with the introduction of the national Hospital Insurance Programme in 1957 the proportion borne by the public sector continued to rise, and by 1961 had risen to 88 per cent or \$924 million. The detailed sources of funds also are shown in Table 11-20. Here deficits of active treatment hospitals are shown separately although these are predominantly met from public funds.

The distribution of funds in the private sector indicates that the proportion of total hospital expenditures, including expenditures on mental and tuberculosis hospital care, financed by voluntary insurance, never accounted for a very substantial share of such expenditures. In 1953, payments by voluntary insurance programmes on behalf of their members amounted to \$63 million or about 16 per cent of total expenditures, and at their peak in 1958 reached \$125 million or about 20 per cent. In the same year, patients and other non-public sources contributed \$130 million, also about 20 per cent. By 1961, voluntary hospital insurance programmes still provided nearly \$49 million, and patients and other sources \$61 million, the equivalent of about 12 per cent of all hospital expenditures. Many of the payments made by patients or by voluntary insurance programmes are for semi-private and private hospital care, not an insured benefit under the Hospital Insurance Programme, but some of it is the consequence of the manner in which certain provinces finance their share of the costs—by a small per diem charge to patients. In one sense then, the classification of sources of funds used in Table 11-20 is somewhat arbitrary since premiums paid by individuals and

TABLE 11-20 SOURCES OF FUNDS FOR EXPENDITURES ON HOSPITAL SERVICES, CANADA, SELECTED YEARS,
1948-1961*

Item	1948	1950	1953	1954	1955	1956	1957	1958	1959	1960	1961
	\$'000,000										
Patient and Other Revenue [†]	116.5 [‡]	144.1 [‡]	117.0	113.5	108.2	129.2	139.5	129.7	97.7	114.5	61.4
Voluntary Insurance ^a	—	—	62.7	75.8	85.9	100.6	117.0	125.5	58.9	58.7	48.9
Sub-total.....	116.5	144.1	179.7	189.3	194.1	229.8	256.5	255.2	156.6	173.2	110.3
Public Insurance ^b	13.0	32.2	46.5	53.6	58.5	62.5	68.7	100.1	324.8	367.3	565.0
Workmen's Compensation ^c	—	—	7.1	7.7	8.7	10.2	10.8	11.6	12.2	12.7	16.5
Sub-total.....	13.0	32.2	53.6	61.3	67.2	72.7	79.5	111.7	337.0	380.0	581.5
Deficits of Active Treatment Hospitals ^d	2.2	4.8	13.2	15.9	18.9	22.1	25.8	30.4	13.3	20.6	5.9
Govt. Grants, Payments for Indi- viduals and Federal Hosp. ^e	83.3	120.2	157.6	180.2	199.9	205.1	225.6	242.7	227.2	252.4	226.3
TOTALS.....	215.0	283.3	404.1	446.7	480.1	529.7	587.4	640.0	734.1	826.2	924.0
Public Insurance, Workmen's Comp. Govt. Grants and Payments, Two- thirds Deficits.....	97.7	137.6	219.9	252.0	279.6	291.9	322.1	374.4	573.0	646.1	811.7
Public Funds as a Percentage of Total Expenditures ^f	45.4	48.6	54.4	56.4	58.2	55.1	54.8	58.5	78.0	78.2	87.8

*Includes public and private active treatment, mental, tuberculosis and chronic hospitals. Excludes National Defence Hospitals.

[†]Includes direct payments by patients, gifts, charitable donations, contributed services, earnings from endowments, cash discounts and net revenue from ancillary operations, particularly income from mental hospital farms.

[‡]Includes payments by workmen's compensation and private insurance programmes not available before 1953.

^aExcludes administrative costs.

^bExcludes administrative costs. Includes premiums paid by business firms and residents of those provinces where premiums are levied.

^cThese deficits are covered at a later date by government and private funds.

^dIncludes a small unknown amount paid by patients in federal hospitals.

^eExcludes workmen's compensation before 1953. It is estimated that including workmen's compensation public funds would have accounted for approximately 47 per cent of total expenditures in 1948 and 51 per cent in 1950.

Source: Dominion Bureau of Statistics, *National Accounts; Mental Institutions; Tuberculosis Institutions; Department of Finance, Public Accounts; Department of National Health and Welfare, Expenditures on Personal Health Care in Canada, 1953-1961, Hospital Care in Canada, Selected Public Hospital and Medical Care Plans in Canada*, Ottawa: Queen's Printer.

families under the Hospital Insurance Programme are considered as public funds. If these premiums were to be included as part of the private sector then the private share of hospital financing would be somewhat greater.

The sources of funds for expenditures on personal medical services between 1953 and 1961 are shown in Table 11-21.¹ The private sector of the economy is the major source of funds for expenditures on personal medical services amounting to 85.3 per cent in 1953 and 87.6 per cent in 1961 with

TABLE 11-21 SOURCES OF FUNDS FOR EXPENDITURES ON PERSONAL MEDICAL SERVICES, CANADA, 1953-1961*

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961
	\$'000,000								
Patients	108.0	108.0	115.2	132.9	139.6	144.9	153.8	161.3	168.9
Voluntary Insurance†.....	42.5	51.9	60.7	74.9	93.4	110.2	130.8	148.4	166.9
Sub-total.....	150.5	159.9	175.9	207.8	233.0	255.1	284.6	309.7	335.8
Public Insurance‡.....	1.7	1.5	1.7	1.8	2.0	2.6	2.9	2.9	3.2
Workmen's Compensation‡.....	12.2	14.1	15.0	15.9	18.8	20.9	21.8	23.0	24.2
Sub-total.....	13.9	15.6	16.7	17.7	20.8	23.5	24.7	25.9	27.4
Government Payments for Individuals.....	12.2	13.1	13.9	14.6	15.4	16.9	17.5	18.9	20.0
TOTAL.....	176.6	188.6	206.5	240.1	269.2	295.5	326.8	354.5	383.2
Public Insurance, Workmen's Compensation and Gov't Payments for Individuals.....	26.1	28.7	30.6	32.3	36.2	40.4	42.2	44.8	47.4
Public Funds as a Percentage of Total Expenditures.....	14.7	15.2	14.8	13.5	13.4	13.7	12.9	12.6	12.4

*Excludes all medical services where these are provided by salaried physicians, in hospitals or in industry. Excludes administrative costs of insurance programmes.

†See footnote 1, below. "Table 11-21 indicates . . .".

‡Includes premiums levied on persons or industries.

SOURCE: Department of National Health and Welfare, *Expenditures on Personal Health Care in Canada*, Ottawa, 1953-1961.

¹ Table 11-21 indicates that in 1961, payments made by voluntary insurance plans amounted to \$167 million. This compares with \$175 million indicated in Table 18-3. The difference between these two figures is primarily due to the inclusion of some hospital expenditures in Table 18-3 that are excluded here.

little significant change over the period. The sources of private expenditures have undergone a substantial change as voluntary insurance programmes accounted for an increasingly large share of private expenditures rising from 28.2 per cent in 1953 to 49.7 per cent in 1961. The trend rate of growth of outlays by voluntary insurance has declined from an annual average rate of nearly 22 per cent a year in the period 1953-1957 to 15.6 per cent in the period 1957-61. The reason for this rate of growth was likely the extension of coverage to people of working age who, because they belonged to certain identifiable and easily accessible groups, could readily be included in prepayment plans. With these groups now largely covered, the remainder, about one-half of Canada's population, consists of individuals whose health status, occupational status and location makes it more difficult to provide them with the same insurance as is provided for those already covered.¹ Hence we cannot expect the rapid rate of growth observed from 1953 to 1957 to continue and in fact the slowing in the rate of growth in the more recent period supports this conclusion.

Direct payments for personal medical services still remain large despite the growth of private insurance programmes and government expenditures. Between 1953 and 1961, direct outlays rose from \$108 million to \$169 million, and on the latter date these amounted to 45 per cent of all personal medical care expenditures.

Public funds have actually declined in importance as a source of financing for medical services despite the increase in absolute expenditures from \$26 million to \$47 million. This would be offset to some extent by the fact that some medical services are provided in hospitals by salaried physicians and interns whose incomes are met out of the Hospital Insurance Grant. Of the public sources in 1961, workmen's compensation payments amounted to \$24 million, government payments for individuals to \$20 million and public insurance payments to \$3.2 million. With the introduction of a public medical insurance programme in Saskatchewan in 1963, this sum would now be somewhat higher.

If we combine hospital and medical services in one group then, as shown in Table 11-22 there has been a substantial shift from the private to the public sector, although the private sector still accounts for a very large percentage of the total outlays. In 1953, \$246 million, or 42.4 per cent of all funds were provided by the public sector and \$335 million or 52.6 per cent by the private sector. By 1961, principally because of public hospital insurance, the public sector accounted for \$859 million or 65.7 per cent and the private sector for \$448 million or 34.3 per cent. The distribution of expenditures in the private sector is also noteworthy. In 1953,

¹ See Chapter 10.

voluntary insurance programmes accounted for 31.9 per cent of the revenue provided by patients and other non-government sources. By 1961, this had risen to 48.4 per cent, but patients and other revenue sources still provided half of the funds needed to finance expenditures not covered by some public programme.

TABLE 11-22 SOURCES OF FUNDS FOR EXPENDITURES ON HOSPITAL AND PHYSICIANS' SERVICES, CANADA, 1953-1961

Item	1953	1954	1955	1956	1957	1958	1959	1960	1961
	\$'000,000								
Patient and Other Revenue, Voluntary Insurance, One-third Hospital Deficits.....	334.6	354.5	376.3	445.0	498.1	520.4	445.6	489.8	448.1
Public Insurance and Workmen's Compensation.....	67.5	76.9	83.9	90.4	100.3	135.2	361.7	405.9	608.9
Government Grants and Direct Payment for Individuals, Two-thirds Hospital Deficits.....	178.6	203.9	226.4	234.4	258.2	279.8	253.4	285.0	250.2
Total Expenditures.....	580.7	635.3	686.6	769.8	856.6	935.4	1,060.7	1,180.7	1,307.2
All Public Programmes*.....	246.0	280.7	310.2	324.2	358.3	414.8	615.2	690.9	859.1
Public Programmes as a Percentage of Total Expenditures.....	42.4	44.1	45.2	42.1	41.8	44.3	58.0	58.5	65.7

*Includes public insurance, workmen's compensation, government grants, direct payments and hospital deficits covered.

SOURCE: Based on Tables 11-20 and 11-21.

Once we move beyond hospital and medical expenditures, the sources of funds for other types of health expenditures are difficult to delineate. Table 11-23 attempts to classify these expenditures in an approximate manner. Since the greater part of dental and other health services are financed in the private sector along with prescribed drugs these have been allocated to the private sector and in 1953 it is estimated that privately financed health expenditures amounted to \$557 million compared with \$389 million publicly financed expenditures. In 1961, privately financed expenditures had risen to \$909 million but publicly financed expenditures had increased somewhat more rapidly and now amounted to \$1,109 million.

TABLE 11-23 ESTIMATED PRIVATE AND PUBLIC EXPENDITURES ON PERSONAL HEALTH SERVICES AND OTHER HEALTH ITEMS, CANADA, 1953 AND 1961

Item	1953	1961
	\$ '000,000	
<i>Privately Financed:</i>		
Hospital and Medical Services.....	334.6	448.1
Dental and Other Health Services*.....	105.5	233.8
Prescribed Drugs*.....	48.8	111.0
Hospital Construction†.....	39.5	58.6
Administrative Costs of Health Insurance‡.....	28.6	57.6
Sub-total.....	557.0	909.1
<i>Publicly Financed:</i>		
Hospital and Medical Services.....	246.0	859.1
Public Health Services ^a	58.0	105.0
Hospital Construction ^b	78.8	119.2
Administrative Costs of Health Research ^c	3.5	14.0
Health Research ^d	2.8	12.0
Sub-total.....	389.1	1,109.3
TOTAL.....	945.1	2,018.4

*Predominantly financed in the private sector so allocated to this sector.

†Estimated to be one-third of expenditures on hospital construction.

‡Excludes accident and sickness insurance. Includes dividends credited to policy-owners and increases in unearned reserves and advance premium accounts.

^aIncludes *some* expenditures for research and the education of health personnel made under the National Health Grants.

^bEstimated to be two-thirds of total expenditures.

^cEstimated costs of administering public hospital and medical programmes.

^dIncludes research grants made under the National Health Grants and other Federal Programmes.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Table 11-24 gives the percentage distribution of private and public spending on all health services along with hospital capital and other health items. In 1953, privately financed expenditures amounted to 58.9 per cent of total spending and public spending to 41.1 per cent. By 1961, privately financed spending, while still substantial had fallen to 45.0 and public spending had risen to 55.0 per cent. If expenditures on non-prescribed drugs are included in these estimates privately financed expenditures rose in 1961 to \$1,113 million and accounted for 49.9 per cent of all spending while publicly financed spending accounted for 50.1 per cent.

TABLE 11-24 PERCENTAGE DISTRIBUTION OF PRIVATE AND PUBLIC SPENDING ON ALL HEALTH SERVICES, CANADA, 1953 AND 1961

Year	Privately Financed	Publicly Financed
1953.....	58.9	41.1
1961.....	45.0	55.0

SOURCE: Table 11-23.

CANADIAN GOVERNMENT EXPENDITURES ON HEALTH CARE BY LEVEL OF GOVERNMENT

Past Trends

As total government outlays for health care have increased, all levels of government have experienced increases in spending. As shown in Table 11-25, between 1947 and 1961 federal expenditures for health services rose from \$57 million to \$470 million, provincial expenditures from \$87 million to \$719 million and municipal governments from \$27 million to \$77 million.¹

As the proportion of total spending on health services has increased so have there been some significant shifts in the outlays made at various levels of government. Provincial governments in this period have provided the greater part of the funds for government-financed health expenditures followed by the Federal Government and by municipal governments. As indicated in Table 11-26, in 1947 provincial governments accounted for 50.9 per cent of total expenditures, the Federal Government accounted for 33.3 per cent and municipal governments for 15.8 per cent excluding expenditures on sanitation and waste removal. By 1961, the proportion of expenditures met by provincial governments had risen to 55.3 per cent, the proportion met by the Federal Government had increased to 38.3 per cent while the proportion met by municipal governments had fallen to 6.4 per cent. Since 1961 these trends appear to be still continuing.

The significant shift in spending clearly has been the transfer of the burden of financing personal health services from the municipalities to the provincial and federal governments. This trend however has developed only since the introduction of the Federal-Provincial Hospital Insurance

¹ The data presented in Table 11-26 are not directly comparable with the data presented in Table 11-23, since they relate predominantly to fiscal rather than calendar years. The differences between the two estimates are minor.

TABLE 11-25 NET GENERAL EXPENDITURE ON HEALTH SERVICES, ALL GOVERNMENTS IN CANADA, 1947-1962, BY LEVEL OF GOVERNMENT*

Year	Federal	Provincial	Municipal†	Total
	\$ '000,000			
1947.....	57	87	27	171
1948.....	60	114	31	205
1949.....	69	156	38	263
1950.....	72	172	43	287
1951.....	82	190	51	323
1952.....	88	210	53	351
1953.....	94	229	54	377
1954.....	100	257	67	424
1955.....	103	271	69	443
1956.....	112	288	74	474
1957.....	118	332	85	535
1958.....	186	363	80	629
1959.....	280	470	72	822
1960.....	330	554	69	953
1961.....	429	621	72	1,122
1962.....	470	719	77	1,266

*Includes expenditures on hospital, medical, dental and allied services, general and public health, the construction of health facilities, research and education but excludes sanitation and waste removal. Federal and provincial expenditures are for fiscal years and are not directly comparable with the data presented in Table 11-23.

†Excludes sanitation and waste removal.

SOURCE: Hanson, E. J., *The Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, from Table B-1.

TABLE 11-26 PERCENTAGE DISTRIBUTION OF GOVERNMENT NET GENERAL EXPENDITURES ON HEALTH SERVICES, BY LEVEL OF GOVERNMENT, CANADA, SELECTED YEARS, 1947-1962

Year	Federal	Provincial	Municipal	Total
1947.....	33.3	50.9	15.8	100.0
1953.....	25.0	60.7	14.3	100.0
1955.....	23.3	61.1	15.6	100.0
1957.....	22.0	62.0	16.0	100.0
1958.....	30.0	57.7	12.3	100.0
1961.....	38.3	55.3	6.4	100.0
1962.....	37.1	56.9	6.0	100.0

SOURCE: Based on Table 11-25.

Programme in 1958. Until that date municipal governments continued to account for approximately the same proportion of total spending but the provincial governments accounted for an increasing share. By 1957, the federal share of total health expenditures had risen to \$118 million but as a proportion of total spending it had declined to 22 per cent. In the same period provincial expenditures rose to \$332 million and amounted to 62 per cent of all government expenditures. Even the rapid expansion of federal government expenditures during the period 1958-62 has still left the provinces with the greatest share of public health expenditures (56.9 per cent in 1962) primarily because the Federal Government does not share in the cost of hospitalization for tuberculous patients and the mentally ill who constitute a great proportion of all hospitalized patients.

INTERNATIONAL COMPARISON

We have presented in previous chapters a comparison of health services provided among different countries using for purposes of illustration ratios of population per physician, per dentist, per nurse, per pharmacist and per hospital bed.¹ The ratios discussed in these chapters illustrate the relative importance which Canadians have placed in obtaining professional

TABLE 11-27 ESTIMATED EXPENDITURES ON SELECTED ITEMS* OF PERSONAL HEALTH CARE† AS PERCENTAGE OF GROSS NATIONAL PRODUCT AT MARKET PRICES, NINE COUNTRIES, 1953-1961

Country	1953	1954	1955	1956	1957	1958	1959	1960	1961
Canada.....	2.50	2.77	2.77	2.74	2.95	3.11	3.37	3.60	3.85
United States.....	2.31	2.76	2.75	2.88	2.97	3.21	3.21	3.34	3.46
New Zealand.....	3.10	3.00	3.07	3.22	3.25	3.33	3.36	3.41	3.59
Australia.....	2.72	2.86	2.94	2.91	3.12	3.24	3.35	3.71	4.06
United Kingdom.....	2.58	2.56	2.61	2.63	2.66	2.74	2.81	3.00	2.98
France.....	2.18	2.28	2.38	2.48	2.56	2.64	2.78	2.94	3.28
Norway.....	2.25	2.22	2.22	2.20	2.39	2.52	2.69	2.72	2.71
Denmark.....	1.91	2.03	2.10	2.14	2.24	2.36	2.40	2.41	2.42
Netherlands.....	1.71	1.78	2.02	2.10	1.94	2.12	2.18	2.15	2.32

*Includes hospital services, physicians' services, and prescribed drugs. Excludes dentists' services.

†Excludes expenditures on public health and for capital purposes.

SOURCE: Special estimates prepared by the Research and Statistics Division, Department of National Health and Welfare.

¹ For a discussion of ratios of population per physician, dentist, nurse and pharmacist, see Chapter 7, and for a discussion of the ratios of population per hospital bed, see Chapter 8.

TABLE 11-28 ESTIMATED EXPENDITURES ON SELECTED ITEMS* OF PERSONAL HEALTH CARE† AS PERCENTAGE OF GROSS NATIONAL PRODUCT AT MARKET PRICES, SIX COUNTRIES, 1953-1961

Country	1953	1954	1955	1956	1957	1958	1959	1960	1961
Canada.....	2.74	3.04	3.02	3.01	3.22	3.41	3.66	3.91	4.17
United States.....	2.65	3.15	3.13	3.27	3.36	3.62	3.60	3.73	3.86
New Zealand.....	3.35	3.24	3.32	3.48	3.51	3.57	3.60	3.63	3.81
United Kingdom.....	2.78	2.77	2.84	2.86	2.90	2.98	3.07	3.26	3.25
Norway.....	2.73	2.69	2.69	2.64	2.83	2.98	3.15	3.17	3.16
Netherlands.....	1.90	1.98	2.23	2.31	2.11	2.37	2.42	2.50	2.57

*Includes hospital services, physicians' services, prescribed drugs, and dentists' services.

†Excludes expenditures on public health and for capital purposes.

SOURCE: Special estimates prepared by the Research and Statistics Division, Department of National Health and Welfare.

health personnel in relation to population and in providing health capital facilities in terms of hospital beds as Canada stands high in comparison with any other country in the provision of health facilities and personnel. To round out this comparison we require a means of relating the total health efforts of Canada to the country's ability to produce goods and services. This we can achieve by comparing total health expenditures with Gross National Expenditures. Comparable data on this basis were obtainable for nine out of the nineteen countries for which personnel data are available and they are presented in Table 11-27. The latter data show that Canada devotes a greater proportion of her total national output to health services than any other of the nations surveyed exceeded only by Australia. The data support the conclusions, which we have presented earlier based on evidence submitted to us in briefs and in the hearings together with personal observations which we were able to make, that Canada's health services are by and large of a very high standard and compare favourably with the best of such services provided in other countries.

In making an international comparison of health expenditures to Gross National Expenditure we have to bear in mind the limitation of such a comparison resulting largely from the difficulties of obtaining fully comparable data. In the less developed countries health services may be provided in the household sector rather than in the market sector of the economy and monetary outlays may significantly underestimate the level of health care. Again comparisons that involve expenditures on a limited number of health services may not be fully indicative since the provision of services may be undertaken by different health personnel in different countries. Thus a country which provided medical care through the services of salaried public health physicians might appear to be spending a very small amount on medical care if a comparison is limited to non-government expen-

ditures. Where comparisons are made for any single year, these also must be treated with caution, since if the introduction of an additional public programme were to occur when the national income was at a level lower than usual, a country might appear to be spending a large proportion of GNE on health when over the long run this may not necessarily be so. Even in developed countries, a continuing difference between the proportion of current Gross National Expenditure allocated to health services in two countries may not mean that there are significant differences between their utilization of health services since the structure of prices in the two countries may differ widely.¹

Bearing these qualifications in mind, in terms of the proportion of GNE allocated to health, Canada ranks among the highest for those countries for which we possess data. Tables 11-27 to 11-29 indicate the amounts of

TABLE 11-29 EXPENDITURES ON HEALTH CARE AS A PERCENTAGE OF GNE, SIX COUNTRIES, 1956-1961

Country	Year	Currency	Expenditures on Health Care*	GNE	Percentage of GNE
Canada.....	1960-61	\$ m	2,120	36,837	5.8
Ceylon.....	1957-58	Rs. m	227	5,725	4.0
England and Wales.....	1960-61	£ m	956	20,370	4.7
Israel.....	1959-60	£ m	240	4,716	5.1
Sweden.....	1956	K m	2,289	49,106	4.7
United States.....	1960-61	\$ m	28,740	522,500	5.5

*Health care expenditures for individual countries may differ slightly in what is included. All exclude expenditures on nutrition but all include expenditures on non-prescribed drugs and pharmaceuticals.

SOURCE: Abel-Smith, B., "Health Expenditure in Seven Countries", *London and Cambridge Economic Bulletin*, March 1963; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

¹ This becomes clear if we consider the following situation. In country A, 1,000 professional men provide services worth \$1,000 a year and expenditures on these services would amount then to \$1 million. In country B, there are 2,000 professional men who each provide the same amount of service as in A, but because of the larger number of professional men, the average price of service is lower and each professional man receives an income of \$500. In this case total expenditures on health services would be the same as in country A but the volume of service would be twice as large. Over time, international mobility of professional men would tend to reduce some of the differences in incomes, and thus prices, between the two countries; but such differences could persist for long periods of time. See Gilbert, Milton, and Kravis, I. B., *An International Comparison of National Products and Purchasing Power of Currencies*, O.E.E.C., 1954; Gilbert, Milton, and Associates, *Comparative National Products and Price Levels*, O.E.E.C., 1958, p. 61. In 1950, the price of health services was relatively cheaper in almost all European countries than in the United States.

GNE allocated to various categories of health services, and although the percentage differences in many cases are small, Canada ranks first or second in all tables for recent years.

Table 11-27 indicates the proportion of GNE spent on hospital services, physicians' services and prescribed drugs for a number of developed countries for the years 1953-61.¹ In 1953, the range of expenditures was from 1.71 per cent to 3.10 per cent, with Canadian expenditures amounting to 2.5 per cent. New Zealand ranked first; Australia, second; the United Kingdom, third; Canada, fourth; the United States, fifth; and the Netherlands. By 1958 each country was spending a larger proportion of GNE on these services while the range of expenditures was from 3.33 to 2.12 per cent. The order of spending was New Zealand, Australia, United States and Canada with the Netherlands still last. By 1961, the proportion spent on health continued to rise with a range of 4.06 to 2.32 per cent. Australia ranked first; Canada, second; New Zealand, third; United States, fourth, and again the Netherlands was last.

There are a number of trends evident in the data. Canada, while always near the top in the proportion of GNE allocated to these health services has been expanding its outlays more rapidly than some other countries and has moved closer to the highest country. Second, the differences between the top five countries are barely .75 per cent. Thirdly, the only country which experienced a decline in the percentage spent on health is the United Kingdom. Finally, there is some difference between the proportions if the countries are divided into North America and Australia and New Zealand compared with European countries, the former being in the top half of the expenditure table. Table 11-28 differs from 11-27 in that the latter table includes expenditures on dental services. Much the same pattern has developed here except by 1961, Canada ranked first with 4.17 per cent followed by the United States and New Zealand but the differences are not very great.²

Table 11-29 gives for the years 1956 to 1961, the proportion of Gross National Expenditure spent not only on personal health services but also for non-prescribed drugs, government health services and construction for a number of countries. It is apparent again, that except for Ceylon, all fall within almost a one per cent range 4.7 to 5.8 per cent, with Canada the highest at 5.8 per cent, followed by the United States with 5.5 per cent, Israel with 5.1 per cent, England and Sweden with 4.7 per cent and Ceylon with 4

¹ The estimates have been prepared by the Research Division, Department of National Health and Welfare on the basis of special correspondence with the respective governments. In each instance these data were supplemented with material from other sources and in some cases the amount of estimation is considerable. The data should therefore be considered as preliminary estimates.

² Data on dental expenditures for Australia are not available. Data on population per dentist ratios suggest that Australia is ahead of Canada with respect to total health expenditures including expenditures on dental services to GNE.

TABLE 11-31 PRIVATE AND PUBLIC EXPENDITURES ON HEALTH AND MEDICAL CARE, UNITED STATES, SELECTED YEARS, 1929-1963*

Year	Total Medical and Hospital Care†	Public Health	Construction Expenditures‡	Research ^a	All Health Expenditures			Excluding Non-Prescribed Drugs and Pharmaceuticals		
					Total Expenditures	Per Capita Expenditures	Percentage of GNE	Total	Per Capita	Percentage of GNE
	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$		\$ '000,000	\$	
1929.....	3,324	100	201	—	3,625	29.77	3.6	—	—	—
1935.....	3,086	124	48	—	3,258	25.58	4.7	—	—	—
1940.....	3,646	180	86	3	3,915	29.53	4.1	—	—	—
1945.....	7,195	223	98	17	7,533	53.63	3.5	—	—	—
1950.....	11,181	328	800	55	12,364	81.20	4.7	—	—	—
1953.....	14,395	322	825	88	15,630	97.58	4.7	—	—	—
1955.....	16,605	316	711	106	17,738	106.90	4.7	—	—	—
1956.....	18,037	368	662	116	19,183	113.57	4.7	—	—	—
1957.....	19,544	414	867	183	21,008	122.15	4.9	—	—	—
1958.....	21,223	349	1,016	237	22,825	130.52	5.2	—	—	—
1959.....	23,120	419	1,101	300	24,940	140.25	5.3	—	—	—
1960.....	24,633	406	1,073	392	26,504	146.69	5.4	24,557	135.90	4.89
1961.....	26,670	425	1,135	510	28,740	156.41	5.5	26,740	145.65	5.16
1962.....	28,985	450	1,215	665	31,315	166.75	5.6	29,180	156.56	5.26
1963.....	30,899	495	1,449	938	33,781	178.64	5.8	31,580	167.98	5.45

*For years ending June 30.

†Includes expenditures on non-prescribed drugs and pharmaceuticals as well as all personal health care.

‡Includes public and private expenditures.

^aIncludes all medical research—predominantly public expenditures.

SOURCE: See Table 11-30.

per cent. The high ratio indicated for Canada is partly due to the particular years available for comparison. If the year chosen had been 1959, Canadian expenditures including non-prescribed drugs and pharmaceuticals likely would not have exceeded 5 per cent and would have been less than that of the United States. For those countries where the data relate to early periods there is little doubt that by 1961 they were spending a larger proportion on health which, in the case of Sweden might be considerable.

Subject to the limitations discussed above, it appears that countries which have a high standard of living have tended to spend roughly a similar proportion of total spending on health care and that the range of spending is surprisingly small varying by about one percentage point around an average value which has been slowly rising over time, and this despite the different techniques used to finance health care—particularly the varying relative importance of the public and the private sector.

Health Expenditures: Canada and United States

Tables 11-30 to 11-33 present the American data on which a comparison can be made with Canadian experience. The most striking aspect of these statistics is of course the magnitude of American expenditures which, in 1962, were the equivalent of 84 per cent of Canada's GNE. In all likelihood, the State of California alone, which now has nearly the same population as Canada, and whose average real per capita income is higher, spends as much for health care as does all of Canada.

TABLE 11-32 TREND RATE OF GROWTH OF SPENDING ON HEALTH,
UNITED STATES, SELECTED PERIODS, 1929-1963
(percentages)

Period	Total Medical and Hospital Care*		Public Health	Construction	Research	All Health Expenditures	
	Total	Per Capita				Total	Per Capita
1929-45.....	5.0	4.0	5.2	-4.6	19.4	4.6	3.8
1945-61.....	8.5	5.7	4.2	16.5	23.7	8.8	6.9
1929-61.....	6.8	4.8	4.6	5.6	21.6	6.7	5.3
1957-61.....	8.0	—	0.6	6.9	29.1	8.1	6.3
1957-63.....	7.9	—	3.2	8.9	31.3	8.2	6.6

*Includes expenditures on non-prescribed drugs and pharmaceuticals.

SOURCE: Table 11-31.

Between 1929 and 1963 expenditures in the United States rose from \$3,625 million to \$33,781 million or almost tenfold; while on a per capita basis the increase was from \$30 to \$179 or nearly sixfold. Excluding non-prescribed drugs and pharmaceuticals, expenditures in 1963 amounted to \$31,580 million or \$168 per capita. Of these amounts, hospital, medical and other personal health services accounted for the greatest proportion in 1963, \$30,899 million; public health expenditures amounted to \$495 million; research expenditures to \$938 million and construction expenditures to \$1,449 million. In terms of proportion of GNE allocated to health services, Table 11-31 indicates that an increasing proportion of total spending has been used for this purpose rising from 3.6 per cent in 1929 to 5.8 per cent in 1963. Excluding non-prescribed drugs and pharmaceuticals the increase was from approximately 3.1 per cent to 5.4 per cent of GNE. Finally the proportion of health expenditures met from public sources is indicated in Table 11-30 where the proportion of expenditures on personal health care financed publicly rose from 9.4 per cent to 20.7 per cent between 1929 and 1963 while public expenditures for all health items rose from 14.2 per cent to 25.1 per cent in the same period. If non-prescribed drugs and pharmaceuticals are excluded from health expenditures, the public share amounted to 25.7 per cent in 1961 and rose to 26.9 per cent in 1963.

Although public financing of health services has been far more important in Canada than in the United States in recent years the pattern of health expenditures in the two countries has been remarkably similar. If we compare the trend rate of growth of personal health expenditures of the two countries it is found that in the United States, during the period 1929-61, spending on all such health services rose at a trend rate of 6.8 per cent a year while Canadian expenditures in the period 1926-61 rose at a trend rate of 6.7 per cent.¹ On a per capita basis the trend rate of growth of spending was 4.8 per cent a year in the United States and 4.7 per cent a year in Canada.

Finally, Table 11-33 provides a comparison of per capita expenditures on various categories of health spending as a proportion of total output. Although the estimated expenditures on drugs and pharmaceuticals in 1929 is only an approximate figure, including such expenditures, Canadians spent about 3.5 per cent of GNE in that year for personal health care compared with 3.3 per cent in the United States.² In 1961, Canadians spent approximately 5.2 per cent of GNE compared to 5.1 per cent in the United States. If expenditures on non-prescribed drugs and pharmaceuticals are excluded, Canadians in 1961 spent a smaller proportion of GNE on personal health

¹ See Tables 11-17 and 11-32.

² This latter figure includes non-prescribed drugs and pharmaceuticals, the Canadian estimate includes only prescribed drugs.

TABLE 11-33 PER CAPITA EXPENDITURES ON HEALTH CARE AND PERCENTAGE OF GNE, BY SELECTED CATEGORIES OF HEALTH EXPENDITURES, CANADA AND THE UNITED STATES, SELECTED YEARS, 1929-1963

Year	Personal Health Services				Personal Health Services			
	Canada				United States			
	Excluding Non-prescribed Drugs and Pharmaceuticals*		Including Non-prescribed Drugs and Pharmaceuticals		Excluding Non-prescribed Drugs and Pharmaceuticals		Including Non-prescribed Drugs and Pharmaceuticals	
	Per Capita Expend.	Percent-age of GNE	Per Capita Expend.	Percent-age of GNE	Per Capita Expend.	Percent-age of GNE	Per Capita Expend.	Percent-age of GNE
	\$		\$		\$		\$	
1929	19.10	3.5	—	—	—	—	27.29	3.3
1945	24.26	2.5	—	—	—	—	51.20	3.3
1953	51.67	3.1	—	—	—	—	90.20	4.3
1959	81.20	4.1	—	—	—	—	—	—
1961	94.52	4.6	106.03	5.2	134.36	4.8	145.26	5.1
1963†	—	—	—	—	151.76	5.0	163.40	5.3
	All Health Expenditures‡				All Health Expenditures ^a			
1929	—	—	—	—	—	—	29.77	3.6
1945	27.51	2.8	—	—	—	—	53.63	3.5
1953	63.54	3.8	—	—	—	—	97.58	4.7
1959	95.21	4.8	—	—	—	—	140.25	5.3
1961	110.03	5.4	121.54	5.9	145.65	5.2	156.41	5.5
1963 ^a	—	—	—	—	167.98	5.4	178.64	5.8

*Includes estimated expenditures on prescription drugs. Excludes general public health expenditures.

†Estimated.

‡Excludes expenditures on research and education of health personnel.

^aIncludes expenditures on research.

SOURCE: Based on Tables 11-2, 11-6 and 11-31.

services than the United States; 4.6 per cent compared to 4.8 per cent.¹ Canadian expenditures on all health care are not available for 1929 but were likely less than American expenditures which amounted to 3.6 per cent. In 1961, Canadian expenditures on all health items amounted to 5.4 per cent of GNE compared to 5.2 per cent of GNE in the United States while if

¹ Estimates of expenditures on non-prescribed drugs and pharmaceuticals are subject to a greater degree of error than most other estimates. Accordingly, American expenditures could be somewhat larger and Canadian spending somewhat less.

non-prescribed drugs and pharmaceuticals are included as a health expenditure, Canadians spent 5.9 per cent of GNE on health and Americans 5.5 per cent.

It must be noted that it is only in the last few years that Canadian spending on personal health services again has approached the proportion spent in the United States; that it is only because of the slower rate of growth of public health expenditures and capital construction in the United States in the nineteen fifties that Canadian total spending as a percentage of GNE has surpassed that of the United States; and that in dollar terms, Americans have always spent more than Canadians and continued to do so in 1961 when American per capita expenditures amounted to \$156 compared with \$121 in Canada.

Through most of the period 1926-61, Americans appear to have spent a slightly larger proportion of GNE on health services than Canadians. And, as is to be expected, a nation with a standard of living somewhat higher on the average than Canada, spent larger absolute sums for each person. Thus in 1961, when Canadians were spending a larger proportion of GNE on personal health services and prescribed drugs, per capita expenditures in the United States amounted to \$145 compared to \$110 in Canada. Moreover, there has been a substantial increase in spending in the United States in the period 1961-63 so that, again excluding non-prescribed drugs and pharmaceuticals, the likelihood is that in 1963 the proportions will not differ substantially one from the other, amounting to between 5.4 and 5.6 per cent of GNE.¹ The particularly rapid growth of Canadian spending on health again, to a large extent, reflects the fact that American expenditures increased more rapidly than Canadian expenditures in the pre-war and war-time period, and the rapid growth of Canadian expenditures in the post-war period has done little more than re-establish the relationships that existed in the pre-depression years.

HEALTH EXPENDITURE TRENDS IN PERSPECTIVE

We have examined the trends in Canadian health spending, along with the trends in health expenditures in other countries and we have seen that the Canadian experience has not been significantly different from that of other nations of comparative wealth, tastes and government organization. We recognize that the growth of spending has been rapid and that health services command a very substantial sum of money each year. On the other

¹ See Table 11-33. In 1963, estimated American expenditures on personal health services amounted to 5.4 per cent of GNE excluding non-prescribed drugs and pharmaceuticals, including these the estimated percentage is 5.8.

hand, we have indicated that in the perspective of time and total Canadian spending, expenditures on health care have not been out of the ordinary; they have not commanded a very substantial share of total output despite the subsidy granted to these services and in recent years there has been a tendency for the rate of growth of spending on health to slow down to a rate comparable with other categories of spending. This trend has been affected to some extent by the introduction of the Hospital Insurance Programme. But increasingly, health expenditures have grown because the per capita consumption of health services has risen and less because the prices of health services have increased. It has taken many years to raise the level of health spending in real terms back to what it was before the great depression. It has taken public policy to raise the consumption of health services—particularly hospital services—of the relatively less well-off to the level enjoyed by those with higher incomes. We expect, however, that this rapid rate of growth will slow down in the future as more and more Canadians achieve the level of consumption of health services needed to keep them active, productive and able to enjoy the benefits of their increasing real incomes. When that day arrives, as it may in the not too distant future, health expenditures will grow at a trend rate determined primarily by the growth of population and the discoveries of science that make improved health care possible. Our estimate of what will be the trend rate of growth of spending on health in the next decade and over the next generation we leave until Chapter 19.

Economic Benefits of Health Services

Although the proportion of income spent on health services has not increased substantially over the past generation, the absolute size of these expenditures has led some people to ask whether or not the allocation of so large a sum to health might not affect the rate of economic growth in Canada. We wish to emphasize before we examine this question that economic growth is not the sole aim of our society and, given the growing wealth of Canada, that economic considerations should not solely be used to deny to individuals the health services needed to alleviate illness and disability and to extend life expectancy. Although we recognize that resources are limited, and individuals cannot expect to receive unlimited amounts of health care, the value of human life must be decided without regard to whether the person is a producer or not. Health services must not be denied to certain individuals simply because the latter make no contribution to the economic development of Canada or because he cannot pay for such services. Important as economics is we must also take into account the human and spiritual aspects involved.¹

HEALTH SERVICES AND ECONOMIC GROWTH

To answer the question whether the economic health of our nation has been adversely affected by increasing efforts devoted to further the health of individual citizens requires us to specify what we mean by economic growth and to define the function that health services play in our economy.

If increases in the total output of goods and services or Gross National Product, are considered to be a measure of economic growth then clearly the health services industry, by adding to total output, has generated economic growth in the same way as the agricultural industry, the automobile industry, the pulp and paper industry or the iron and steel industry. We have already indicated the contribution of the health services industry to the value of total output, and particularly its increase in the past few years when many other industries have either expanded only slowly or even stagnated. Professor T. M. Brown's economic study has documented this development;² par-

¹ See Chapters 3 and 5.

² Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

ticularly the tapering off in the investment boom of the mid-fifties, the multiplication of external sources of supply for many commodities that Canada produces and the intensified competition felt even in the domestic market. The noticeable retardation of the rate of growth of output in the agricultural and manufacturing sectors, consequent on these developments, was alleviated to a considerable extent by the growing output of service industries. The continued high level of demand from individuals, families and business firms for financial, government, educational, and particularly health services has contributed substantially to maintaining the level of output and without this expansion the national income would have been considerably smaller. Nor should it be forgotten that the service industries also use substantial amounts of capital, particularly buildings. Thus the investment component of the national product has also been maintained at a higher level than it otherwise would have been. The growth of the output of the health services industry was accompanied by an increase in output of the construction, electrical machinery, hospital supply and the pharmaceutical industries to name but a few.

EMPLOYMENT EFFECTS OF HEALTH SERVICES

We wish also to emphasize the role of the health services industry in creating employment, both directly as an employer of professional, skilled, semi-skilled, and unskilled manpower, and indirectly through the demand of the industry for the output of other sectors of the economy. While the recent upward trend in the proportion of output contributed by the service sector of the economy has not proceeded long enough to indicate whether it will continue to account for an increasingly larger share of total output, it seems that in order to produce the same proportion of output in a growing economy, an increasing proportion of the labour force must be allocated to this sector. This does not mean that productivity has not increased in the service sector. As we have pointed out in Chapter 11, substantial increases in productivity have been achieved in the health services industry but this has been offset to a large extent by changes in technology that require more personnel. The manpower requirements of the services industry have been so substantial that although employment has declined in the agricultural sector of the economy and failed to grow in much of the manufacturing sector, unemployment has been held down by the expansion of employment in the service sector.

The health industry both public and private, has always made a substantial contribution to the absorption of Canada's growing labour force. Even in the relatively depressed period 1931-41, employment grew at a trend rate of 3.3 per cent compared with 2.6 per cent for the total labour force. Between 1941 and 1961 when the labour force rose by 1.5 to 2 per cent a

year, employment in the health services industry increased at an annual average rate of between 5 and 6 per cent, with the most rapid rate of growth being achieved in the nineteen fifties.¹ Over the whole period 1931 to 1961 full-time and part-time employment in the health sector rose from 68,000 to 281,000, an average annual increase of 6 per cent while the total labour force was increasing at around 2.2 per cent. In this thirty-year period, the proportion of health workers rose from 1.9 per cent of the labour force to 4.3 per cent of the labour force.² Although the industry has always continued to employ a good many more women than men; in the professional fields, medicine, dentistry, etc., men outnumber women to a considerable extent. In over-all terms in 1961 some 76,000 males were employed in medical, dental, hospital and other health activities along with 205,000 female employees and professional self-employed, for a total of 281,000.

One outstanding feature of the employment situation in the health industry is the rapid increase in the job opportunities for women, particularly for part-time work. While male employment rose by 26,000 to 76,000 in the decade before 1961, female employment in hospitals, physicians' and dentists' offices rose by 98,000 to 205,000. As a consequence the growth of the industry has taken place, to a large extent, by absorbing new additions to the female labour force or by using the part-time services of married women, many of whom were registered nurses. It follows then that much of the expansion took place without depriving other sectors of the economy of scarce labour resources and slowing down the rate of growth elsewhere. It is true that the growth of the supply of physicians and other professional personnel might indicate that highly intelligent and able individuals were drawn from other productive sectors of the economy but the increased supply, to a significant extent, was generated by immigration and Canada benefited by attracting professional people. In these cases, a large part of the costs involved in training these professionals were borne by other nations. In short, expansion has taken place largely at the expense of unemployment (actual or underemployment in the home) rather than at the expense of other output these Canadians might have produced.³ The hospital industry has been especially efficient in using the services of part-time female workers and the incomes of many Canadian families, both in the rural and urban parts of Canada, have been raised well

¹ See Table 12-1.

² See Table 12-1. It should be noted that this includes only those professional and non-professional workers who were directly employed in the industry. It does not include those workers employed in the production of drugs, glasses etc., the construction of hospitals and many aspects of public and private health administration. If expenditures on these health items were excluded from total expenditures *real* expenditures on health would not exceed 4.5 per cent of GNE, not a high proportion relative to employment in view of the number of professionals employed.

³ It cannot be said that the education industry was starved for skilled resources by the employment of large numbers of women in the health industry since the higher earnings of education failed to attract them to that occupation.

TABLE 12-1 EMPLOYMENT IN THE HEALTH SERVICES INDUSTRY AS A PERCENTAGE OF THE TOTAL LABOUR FORCE, CANADA, SELECTED YEARS, 1931-1961

Year	Male			Female			Total			
	Labour Force	Employed in the Health Industry	Percent-age Employed in Health Industry	Labour Force	Employed in the Health Industry	Percent-age Employed in Health Industry	Labour Force	Employed in the Health Industry	Percent-age Employed in Health Industry	Trend Rate of Growth of Labour Force
	'000,000	'000,000		'000,000	'000,000		'000,000	'000,000		Per Cent
1931.....	3.3	.024	0.74	.24	.044	18.3	3.57	.068	1.9	—
1941.....	3.7	.031	0.84	.83	.063	7.6	4.53	.094	2.1	2.6
1951.....	4.1	.050	1.21	1.16	.107	9.1	5.26	.157	3.0	1.6
1961.....	4.7	.076	1.61	1.78	.205	11.1	6.48	.281	4.3	2.0
										5.2
										6.0

Source: Based on Dominion Bureau of Statistics, Census of Canada, 1931, 1941, 1951 and 1961, Ottawa: Queen's Printer. Includes only those employed directly in the health industry.

above the subsistence level through the contributions of a wife with a registered nurse's diploma. Nor should it be forgotten that many a professional man has financed his education with the assistance of a wife employed part- or full-time in a hospital.

Automation and changes in technology have had their effect on employment in Canada as has the deficiency of demand. It is not our task to decide which of these factors is more significant than the other in contributing to rising levels of unemployment. What is clear is that the growth of government and private spending for the output of the health services industry has enabled the Canadian economy to move along a growth path that is higher than it otherwise would have been. The demand for goods and services has more adequately measured up to the growth of potential supply, and thus made possible a closer approximation to the optimum growth path and a higher level of employment than would otherwise be the case. It has provided employment for large numbers of people who likely would otherwise be unemployed or not part of the labour force. It has created employment for other sectors as well. Male employment rose particularly in the building trades through the construction of hospital and medical buildings as well as the houses that two-income families purchased, and in many of the other industries which benefited from increased expenditures on health services and health capital facilities.

HEALTH SPENDING—CONSUMPTION OR INVESTMENT

Goods and services can be divided broadly into two classes: those from which individuals and families derive immediate satisfaction and which are called consumption, and those which are used to provide consumption at some future date and which are called investment. It might appear that the classifications which we attach to health services is unimportant and that it matters little in what category they are placed. This is not so since the type of expenditures may have significant effects for policy decisions. If the objective of a society is economic growth, and economic growth is now defined not only as an increase in a nation's output but also as greater output per unit of input—increased productivity—then the question becomes, what will lead to an increase both in output and productivity? What will enable more goods and services to be produced in the future than are produced today? What will permit more output to be produced in the future with the same volume of resources?

Now, if economic growth is defined in this way, and if it is assumed that growth takes place purely as a function of adding to physical capital, machines, buildings and inventories, then it may be implied that resources allocated to the production of health services are consumption and not

investment and thus make no contribution to economic growth. Moreover, if resources are fully utilized elsewhere the expansion of health services may even limit economic growth by taking resources from investment industries. On the other hand, if economic growth also depends on the *number* and *quality* of the population, then many non-material things, particularly health services and educational services may be classed as investment since they either increase the supply of labour or improve its quality, both of which lead to a higher rate of economic growth and more consumption in the future than otherwise could be obtained.

It is not our intention to enter into a technical discussion of the factors which lie behind economic growth. These are set out in detail in the studies prepared for us and they are summarized in Chapter 19. Yet because of the link between the provision of health services, the growth and quality of the population and the rise of total and per capita national output, it is necessary briefly to discuss what these relationships are.

Economic growth does not depend solely on capital goods, tools and construction works, but also on the natural environment and its resources, the stock of labour, knowledge and technology. It is influenced by the extent of the market and the degree to which this permits specialization and the use of large-scale technology. Providing that the demand for goods and services is adequate and measures up to the growth of supply, an economy can achieve a high rate of growth if the supply of capital and labour grows rapidly, and resources and/or technology are abundant. It is evident that population growth is doubly important as a factor related to growth since it is the source of labour supply in the productive system and is also the basis of most of the demand for the output of the system.

The distinction between capital goods and labour is one, however, which is becoming increasingly difficult to maintain. Our own and other studies of economic growth have emphasized that economic growth is not solely to be attributed to additional amounts of labour and capital but also to changes in the human factor, organization, and technology. *A nation's wealth consists not only of structures, machines, inventories and resources, but also of its human capital, the productive skills, knowledge and creative genius of its people. It is the quality of human beings, their energy, ability, attitudes, education and training which make possible the expansion of technological and managerial knowledge which increasingly yield economic progress in the modern world. To the extent that a nation, either individually or collectively, increases investment in human capital either by improving the physical and mental well-being of the population, or by providing increasing amounts of higher education, on-the-job training and re-training for those whose skills become obsolete, so will it have contributed to the growth of per capita output with all that this entails.*

We wish, therefore, to emphasize strongly that not all, or even the greater part, of expenditures on health services are consumption; they are not solely a cost to the individual or society since they may yield substantial economic benefits; they are investment expenditures. It is true that the conventional measurement of the national income or product considers expenditures on health services, like those for food, clothing and education, as outlays for final products, and therefore, as consumption. It is also true that in one sense we have agreed with this classification since we believe that good health directly benefits individual welfare by improving the quality of living. But since health expenditures have led to a reduction of disability and illness for people in the productive ages and to a lengthening of life generally, in many cases benefits have more than outweighed their costs.

Unlike many developing nations where the acceleration of population growth has tended to keep the majority of people living at a bare subsistence level, Canada has been able to increase its population and to achieve a rising standard of living in the form of increased consumption of goods and services. This has been particularly so since the end of World War II. In some years the upward trend was halted, but over the period as a whole a definite improvement has taken place. Personal expenditures per capita in real terms rose from \$840 in 1946 to \$1,032 in 1962 or by 23 per cent. Rather than being subject to diminishing returns, the Canadian economy as a whole is, in all probability, continuing to experience increasing returns to labour and capital. That is, we are still below the optimum proportionality of labour and reproducible capital to our land and natural resources. In such circumstances additions to our labour force have not only created a larger national output and permitted per capita incomes to rise but also, as the Canadian market expanded, made possible the creation of specialized industries and the more rapid replacement of out-of-date equipment and facilities. It is true that, in certain periods, not all of the growing labour force has been fully employed, but this reflects in part the inadequacy of economic policy generally pursued, not a proof that a growing population is undesirable.

ECONOMIC BENEFITS OF HEALTH CARE

Expenditures for health care can generate a larger productive labour force in two ways: by extending the length of working life and by ensuring that individuals are able to work more regularly during their productive years.

Size of the Labour Force

The decline in early mortality, which has been examined in Chapter 5, has had as its consequence, a lengthening of the period of time spent in pro-

ductive activity, and this despite a longer period of education and delayed entrance into labour force and a declining age of retirement. Since the end of World War I, the life expectancy of the average North American has increased from 54 years to 70 years, while in the last 25 years, the life expectancy of the average Canadian has increased from 61 to 70 years.¹ Moreover, though mortality in infancy and childhood, and from diseases which strike young adults, such as tuberculosis and poliomyelitis, have been reduced to a low level; there has not, as yet, been any significant lengthening of life into the period when individuals consume more than they produce. The unproductive aged have not increased to any substantial extent as a proportion of the total population and the indications are that this proportion will rise only a little over the next generation. Thus in 1961, persons 65 years of age and over comprised 7.6 per cent of Canada's population and are expected to comprise 8.9 per cent in 1991.² As more young people reach their productive years, the nation as a whole is able to support a larger number of unproductive persons including children, students in university and the aged.

We have not calculated the value of an additional unit of human capital in Canada, but a rough estimate has been made of the value of an American male in 1950 which suggests that this would amount to between \$17,000 and \$33,000 depending on the rate of interest used.³ The value of a man is greatest around 27 to 30 years⁴ but even up to the age of normal

¹ Bureau of The Census, United States Department of Commerce, *Statistical Abstract of the United States 1961*, Washington, D.C.: U.S. Government Printing Office, p. 54; and Dominion Bureau of Statistics, *Vital Statistics 1960*, Ottawa: Queen's Printer, 1962, p. 62.

² Stukel, A., "Population Projections, 1966-1991", Appendix E, in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Tables 1 and 11.

³ See Weisbrod, Burton A., *The Economics of Public Health*, University of Pennsylvania Press, Philadelphia, 1961. The economic value of a man at any point in time is calculated by estimating his life expectancy, his probability of being employed, his expected gross earnings and consumption in each year of his life. By subtracting consumption from gross earnings and applying a rate of discount to this stream of earnings, an estimate can be made of the present value of a man to his family or society. It is clear that all such estimates, particularly the economic estimates, are subject to a substantial margin of error. It is also true that the money value of a man depends on the rate of discount chosen. If resources are available for investment in health or in alternative forms of investment and the latter yield 10 per cent, then the appropriate rate of discount might be 10 per cent and the money value of a man would, according to Professor Weisbrod's estimate, be \$17,000. If, however, it is believed that the rate of return on alternative investments would only be 4 per cent then the money value of a man would be \$33,000. The lower the discount rate the more valuable future dollars become. It follows then that what we think about rates of return affect our allocation of resources but it is significant that even at a relatively high rate of discount, the money value of a man is positive.

⁴ As a man acquires knowledge and experience his income continues to rise until his forties. The economic value of women, once they have brought up their children is somewhat less as women workers reach their peak incomes earlier than men. Such an economic assessment in no way reflects on human values which frequently continue to rise with the wisdom and experience that comes with age.

retirement an average adult male, alive and working, still produced more than he consumed; that is, he had a net productivity and the nation as a whole benefited if he lived to his normal retirement age. Although the value of a man in Canada would be somewhat less than the estimate suggested for the American male since average earnings are somewhat lower, there is an offset in that his personal consumption may also be somewhat lower. Thus there is little doubt that it is in society's interest to keep productive workers active until retirement. What has been said here about male members of the labour force also applies to female members of the labour force and to women working at home though the present value of their future net earnings will be lower. It is true that the resources used for health care might yield a higher social benefit if used elsewhere, but this question is still undecided and there is a growing body of opinion to support the belief that investment in human capital yields returns comparable to investment in fixed capital.¹

Reduction of Disabling Illness

It is of course necessary to recognize that despite the level of health spending, indications are that the amount of disabling illness remains large and has not declined to the same extent as mortality. In part, the failure of morbidity to decline may be due to better reporting of illness compared to earlier periods and to the ability of an increasingly wealthy society to take time from work in order to avoid the possible serious complications of untreated minor illness. Yet, given the nature of man who must ultimately sicken or die, the volume of disabling illness has certainly increased as a consequence of health expenditures that permit the survival of the permanently disabled young person and the non-productive chronically ill aged. On the other hand, it is also evident that there are many individuals, who a generation ago would have been chronically ill and thus unproductive, but who are now working and not only supporting themselves but also others. The marked decline in long-term disability from tuberculosis, mental illness, poliomyelitis, and other diseases that disabled the working population has increased the output of the nation just as effectively as if the unemployment rate of a community were to decline permanently. In addition, to the extent that capital equipment lies idle or is used less effectively which may be common in a small firm, a reduction of work-time lost through illness may increase the productivity of capital as well as labour.

¹ The difficulty which arises when distinguishing the returns to investment in health from the returns that arise from other forms of investment in human capital are discussed further on in this chapter.

Health and Education

We also wish to emphasize that health expenditures by reducing the incidence of death and illness have indirectly stimulated that major engine of progress, investment in education. We have indicated that the growth of population increases the size of the market and thus the potential for specialization. But the acquisition of education also involves a cost to the individual, to business, or to society so that the amount of such investment undertaken will depend, to a substantial extent, on the expected rate of return. This, assuming no technical obsolescence, will depend on the average length of productive life. It follows that the lengthening of life itself has played a vital role in increasing the stock of investment embodied in Canadians since it has made it more attractive for individuals to incur the costs of advanced education and made it more likely that Canadian society will reap the benefits derived from public expenditures on schooling generally. Although it is probably true that specific individuals believe that they will live until 70, if the average expectancy of life at age 16 was 40 the willingness of the average individual to delay entry into the labour force until he had acquired advanced training, in all probability would be substantially less than it is today. Even when technical obsolescence is taken into account, the lengthening of working life provides an incentive to incur the costs of re-training since it offsets the fact that the incentive to invest in human capital declines at an accelerating rate with age.

The growing contribution of employed women to the material progress of our nation also has been facilitated by the lengthening of their life and the reduction of severe disabling illness among children. Young women now find it profitable to invest in education before marriage in the knowledge that the returns to such investment can ultimately be garnered when their children are grown up or even when their children are in school. The increasing incomes of Canadian families owes a great deal to the ability of wives to supplement their husbands' incomes.

Health Essential to Economic Progress

Even capital accumulation itself, to the extent it depends on savings, has been influenced by the lengthening of human life. Given the expectation of a very short life, a preference for current over future consumption would be a rational choice for an individual since a consumption plan which stresses early years is more certain of fulfilment than one which emphasizes later years. A lengthening of the life span by increasing the possibility of surviving into retirement will lead generally to an increase in the rate of saving and thus capital accumulation.

It must also be recognized that many expenditures on health are the necessary cost of operating an advanced industrial economy and thus are essential for economic progress. They are intermediate expenditures, part of the production costs of final output. Indeed it has been argued that all expenditures on health should be classified in this way since they do not provide pleasure or product but keep us sufficiently healthy to earn income or enjoy it. If they do not contribute to our standard of living they should then be treated as a form of input to be excluded from the national output altogether. In an epidemic where hospitals move from 80 to 100 per cent of capacity and all physicians and nurses are working overtime, it can hardly be supposed that consumption of goods and services has risen merely because health expenditures have risen.

This has not been our approach. But we wish to emphasize that many expenditures arise as a consequence of the hazards of occupation including industrial accidents, travel on roads and highways to and from work or school, and from stress illness associated with the pressures of modern business and factory life. Industrial air and water pollution and radiation hazards generate their yet unmeasured costs in terms of health expenditures as well as in benefits for an industrial society.

The benefits that derive from health services are apparently one major reason why Canadians, either individually or collectively, have spent a significant proportion of their income on such services. Despite their cost in money and foregone leisure, and despite the uncertainty that attaches to any specific benefit, Canadians have been willing, where they are able, to purchase health services since these offer a substantial monetary return when they enable the recipient to carry on with his normal productive activities. We have already referred to the increasing probability of achieving a real benefit from any given expenditure on health. Over this period the cost of mortality and illness has also been rising because of the amount of educational capital embodied in human beings. At the same time this investment has generated higher incomes so that Canadians have been able to devote a rising proportion of their growing incomes to improve their state of health. It makes economic sense to devote a portion of income to purchase the probability of better health resulting from improved health services. The same reasoning accounts for expenditures by business firms on direct health services or health insurance for their employees. Since firms provide on-the-job training and incur costs when productive workers are absent, they are willing to spend additional sums to reduce absenteeism and labour turnover. Thus health expenditures represent an investment outlay which may yield benefits to the firm equal to or in excess of their cost.

Despite general agreement that the provision of health services has contributed to the decline in mortality and morbidity and to the productivity of our society, it is not possible, at present, statistically to separate this

contribution from that of improved diet, housing, environmental sanitation, and education, or to develop an estimate of the contribution of any specific health service to the declining importance of any specific disease; though in many cases the evidence would indicate that the development of health research has played a significant role.¹ Over the past quarter of a century however, the probability that additional expenditures by Canadians on food, clothing and housing would yield significant benefits in the form of lower mortality or morbidity has likely declined while the probability of achieving a benefit from expenditures on medical, hospital, nursing, and dental services along with drugs has almost certainly increased. To the extent that health expenditures have contributed to reducing mortality and morbidity in the labour force, they have become more significant in that part of the economic complex which we call investment in human capital. In a broad historical perspective we can consider a major factor in economic progress, the shift from land in the eighteenth century to physical capital in the nineteenth century, and the growing emphasis on human capital in the twentieth century. In our view, continuing investment to improve human qualities; better education, greater productivity and a longer creative life span will pave the way for even more remarkable economic progress in the twenty-first century.

We have concentrated our attention on the benefits that are derived from expenditures on health services for the productive labour force. This does not mean that there are no economic benefits to be derived from the provision of health services for those who make no direct contribution to the

¹ Considerable literature is accumulating dealing with investment in human capital and economic returns resulting from increased life expectancy.

Examples include:

Bator, Francis M.—*The Question of Government Spending* (Harper 1960).

Becker, Gary S.—*Investment in Human Capital—A Theoretical Analysis*, unpublished study prepared for Exploratory Conference on Capital Investment in Human Beings, New York: National Bureau of Economic Research, 1961.

Denison, Edward F.—*The Sources of Economic Growth in the United States and the Alternatives Before Us*, Washington, D.C.: The Committee for Economic Development, 1962.

Federal Expenditure Policy for Economic Growth and Stability, Joint Economic Committee, Washington: United States Government Printing Office, 1957.

Fein, Rashi—*Economics of Mental Illness*—Joint Commission on Mental Illness and Health, Monograph Series No. 2, New York: Basic Books, Inc., 1958.

Lees, D. S.—*Health Through Choice*, Great Britain, Institute of Economic Affairs, 1961.

Mushkin, Selma J.—*Health as an Investment*, unpublished study prepared for Exploratory Conference on Capital Investment in Human Beings, New York: National Bureau of Economic Research, December, 1961.

Review of Economics and Statistics, Supplement, August, 1962 (various articles).

Schultz, T. W.—“Investment in Human Capital”, *American Economic Review*, March 1961, pp. 1-17.

Vaizey, John—*The Economics of Education*, London: Faber and Faber, 1962.

Weisbrod, Burton A.—*Economics of Public Health*, Philadelphia: University of Pennsylvania Press, 1961.

Weisbrod, Burton A.—“The Valuation of Human Capital”, *The Journal of Political Economy*, 1961, pp. 425-436.

Weisbrod, Burton A.—“An Expected-Income Measure of Economic Welfare”, *The Journal of Political Economy*, August, 1962, pp. 355-367.

national output. Expenditures on health services for children are clearly intermediate expenditures since an obvious benefit is the maintenance and expansion of the stock of human capital. With the prolongation of education and training a person may have no net productivity until the age of 19 or 20. The cost to society and the family of the loss of such an investment through ill-health is becoming increasingly large. Expenditures on health services for housewives and mothers also can be considered as an intermediate rather than a consumer expenditure. Although the National Income excludes the services of wives it does include the services of paid housekeepers, cooks and nurses whose services in most households are provided by wives. By keeping wives in good health, not only the family and society as a whole benefits, but it becomes possible for a nation to prepare those women entering the labour force for other tasks than those involved in operating a household.

INDIRECT BENEFITS OF HEALTH SERVICES

In our emphasis on the more direct benefits to be derived from a healthy population we must not overlook certain indirect benefits. Thus expenditures on health services which lead to the elimination of infectious disease not only allow people to fill a productive role once again, but also prevent them from infecting future generations. The benefits that accrue from the control of tuberculosis, smallpox, and venereal diseases extend far beyond those received by this generation. To the extent that diseases are eliminated, the costs of case-finding and treatment are also eliminated although, given the inevitability of death through disease, and our desire to provide medical and hospital care for the dying, some other disease ultimately must be treated at a cost. Finally, since the physically and mentally ill and the disabled cannot be left to starve or die of neglect, the rehabilitation of the non-productive worker reduces the need for a transfer of resources from the healthy members of the society to the sick and disabled. This transfer does not add directly to the total product of society but it permits governments to reduce taxes as welfare payments decline, or provides them with additional revenue with which to finance other public consumption.

There are also mental stresses that the provision of health services may eliminate. The loss of a husband, wife or child, or the existence of a permanently disabled member of a family, can have serious effects on the efficiency of the productive members of the family either directly through grief or indirectly through the reallocation of effort that a permanently disabled or retarded member lays upon others. To the extent that health services eliminate those unhappy events, the productivity of the household may be sufficiently high as to pay the cost of such services. Similarly, ex-

penditures on services for the aged or mentally ill that restore them even part way to health, may relieve households of heavy burdens and increase the productivity of all household members. But even if there were no external benefits in the form of increased productivity, such health expenditures may still not be regarded as consumer expenditures since they are incurred to avoid the losses resulting from complete disability.

VALUE OF HEALTH SERVICES

The conclusion at which we have arrived is simply this. Expenditures on health services are, in many cases, quite different from the purchase of an ordinary consumer good. They may actually be a form of investment in human capital; they may be more important, in an affluent society, than additional expenditures on food and shelter and they may yield important external benefits both for the family and society as a whole. If income is not a barrier to purchase health services we can expect that a significant proportion of individual or family resources will be devoted to their purchase. Yet some fundamental problems remain.

Although most health expenditures involve some investment in human capital or an intermediate expenditure they may also involve consumption outlays at the same time or even be the consequence of other consumption on the part of the individual.

Lung cancer, cardiac illness, alcoholism, and highway and other accidents, all appear to be, in part, the consequence of individual behaviour. In a sense, more responsible behaviour would eliminate the need for many health expenditures. But having incurred an illness it would still pay an individual to regain his productive position and avoid disability or premature demise. We may regret unwise human behaviour but we have to accept it as a reality of life. We feel that even where the net gain to society is negative, i.e., when output to be expected is less than the costs of health services required, it still is desirable to assist people to regain their health.

We face great difficulties in deriving a satisfactory measurement of the benefits of health services since the demand for such services may be a combined demand, a demand for preventive or treatment services together with a demand for some satisfaction that has no direct effect on health. This becomes clear if an attempt is made to define the optimum volume and consumption of health services that should be provided for a specific illness or the prevention of some disease. Does an illness require a private hospital room, special nursing care, specialist or general practitioner care, chronic or active treatment hospitalization, ten or eleven days of hospital care, hospitalization for laboratory and radiological diagnostic services, a

physical examination every six months or every year? To raise these questions is to reveal at once the difficulty of answering them, of isolating the intermediate or investment expenditure that yields health benefits from the consumption expenditure that yields consumer satisfaction but is not essential for the maintenance of good health. We have attempted to answer this question in our discussion of the quality of health care and the role of the physician in determining what is "necessary" or "unnecessary".¹ Here we wish to emphasize that in economic terms it is desirable to compare the marginal or additional cost of an additional health service with the marginal benefit derived from it.

From the point of view of both the physician and the patient the additional cost of one more diagnostic service or an additional day in hospital, may outweigh even a small possibility of the avoidance of death or a more complete recovery since such an outlay is not consumption but a good investment. The economics of health services in an affluent society are considerably different from those of a country facing problems in providing sufficient food to keep people from starving.

ESTIMATED COST OF ILLNESS

Although progress in the development and the provision of health services has reduced mortality and the period of disability from many illnesses, and although it is not to be expected that the productive gains from health expenditures will be as great in the future as they have been in the past, further improvements in health would still yield significant economic as well as human benefits both by increasing the output of goods and services that Canadians can produce and by freeing resources now devoted to health and welfare for other purposes. There are thousands of Canadians who die long before their full productive contribution to society has been achieved,² thousands of others who make no productive contribution because they are permanently mentally or physically disabled while other thousands lose time from work or from school and home activities because of non-disabling illness.

The economic cost of premature mortality can be indicated by the application of Professor Burton A. Weisbrod's estimate³ of the present value of net foregone earnings for American men and women in 1950 to the

¹ See Chapter 7 and 13.

² In 1960, there were 57,691 deaths in Canada under the age of 65. (See Dominion Bureau of Statistics, *Vital Statistics 1960*.)

³ Weisbrod, B. A., *Economics of Public Health*, *op. cit.*, Chapter 7, pp. 48-70.

mortality from cancer, diseases of the circulatory system and accidents in Canada during 1960.¹ Using a discount rate of 10 per cent, the elimination of these deaths in one year alone would have been the equivalent of a net gain—after deducting consumption expenditures of survivors—of over \$400 million, a return that would make some investment in health worthwhile. If the discount rate used were to be 4 per cent the gains would be all the larger as can be seen from Table 12-2 where the use of a 4 per cent discount rate increased the gains from reducing mortality due to cancer from \$118 million to \$167 million. A lower rate of discount would also increase the value of production consequent on the elimination of accidents. This is especially true where the death of children is involved. With a high rate of discount, earnings far in the future possess only a small present value so that the loss of a child has a lesser economic significance than the loss of life of a young adult male.

Absence from work because of illness or injury also imposes heavy burdens on Canadians. The direction of causation may be uncertain, but it is significant that there is a high correlation between the number of days an individual is disabled from illness and the size of his income. Low incomes and above average illness are still too common an experience in our society. Thus, on an average day there are about 2 per cent of the labour force² absent from work because of illness and accident while during the whole year the total number of days lost through non-disabling physical illness amounted to nearly 34 million or 5.2 days per employed person. Days lost from work as a consequence of total physical disability were estimated to be 53 million and from mental illness, 11.4 million. The cost of such absences is estimated to have been equal to a loss of output of at least \$1,420 million. This was equivalent to about 3.8 per cent of total output (GNP) and 6.4 per cent of the total civilian payroll. This loss of output was the consequence of a loss of productivity from non-disabling illness among those normally employed amounting to around \$490 million; loss of productivity as a consequence of permanent physical disability amounted to \$765 million; while productivity amounting to an estimated \$165 million was lost as a consequence of mental illness.

In 1961 the average Canadian worked 2,164 hours per year. On the basis of an average 40 hour five-day week this represents 270 working days a year. Accordingly, the 64 million man days of inactivity because of total physical disability and mental illness may represent a total loss of 237,000

¹ See Tables 12-2 to 12-4.

² In 1960, the non-effective rate from certified illness in the Federal Civil Service was 1.9 per cent. See Dominion Bureau of Statistics, *Illness in the Civil Service 1960*, Ottawa: Queen's Printer, 1962, p. 12.

TABLE 12-2 ESTIMATED PRESENT VALUE OF LOST NET PRODUCTION RESULTING FROM DEATHS FROM CANCER, CANADA, 1960, AT FOUR AND TEN PER CENT DISCOUNT RATES

Age Group	Male			Female			Male		Female		Both Sexes	
	Discount Rate of Ten Per Cent						Discount Rate of Four Per Cent					
	Present Value of Net Foregone Earnings of One Individual at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Present Value of Net Foregone Earnings of One Individual at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Present Value of Net Foregone Earnings of One Individual at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Present Value of Net Foregone Earnings of One Individual at Each Age	Total Present Value of Net Foregone Earnings	
	\$	'000,000		\$	'000,000		\$	'000,000	\$	'000,000	\$	'000,000
0-4.....	1,897	.24	110	1,984	.22		19,672	2.34	17,841	1.96	.46	4.30
5-9.....	3,633	.33	57	3,753	.21		23,857	2.15	21,691	1.24	.54	3.39
10-14.....	7,611	.44	46	7,798	.36		30,651	1.78	27,957	1.29	.80	3.07
15-19.....	14,933	1.06	37	15,315	.57		39,741	2.82	36,487	1.35	1.63	4.17
20-24.....	22,415	1.46	38	20,966	.80		47,017	3.06	41,077	1.79	2.26	4.85
25-29.....	26,258	2.28	82	21,515	1.76		48,826	4.25	39,496	3.24	4.04	7.49
30-34.....	26,966	3.61	155	21,889	3.39		46,396	6.22	37,169	5.76	7.00	11.98
35-39.....	26,324	4.84	308	21,363	6.58		41,921	7.71	33,344	10.27	11.42	17.98
40-44.....	23,273	6.28	488	18,479	9.02		34,821	9.40	26,991	13.17	15.30	22.57
45-49.....	19,056	10.16	755	14,470	10.92		26,848	14.31	19,849	14.99	21.08	29.30
50-54.....	14,741	11.47	866	10,731	9.29		19,343	15.05	13,526	11.71	20.76	26.76
55-59.....	10,666	12.54	998	7,048	7.03		12,631	14.84	7,777	7.76	19.56	22.60
60-64.....	5,833	8.22	1,118	3,276	3.66		5,769	8.13	2,598	2.90	11.88	11.03
65-69.....	616	1.06	1,293	— 62	— .08		— 484	— .84	— 1,421	— 1.84	.98	— 2.68
TOTAL.....	—	63.98	6,351	—	53.73		—	91.22	—	75.59	117.71	166.81

SOURCE: Dominion Bureau of Statistics, *Vital Statistics 1960*, and Weisbrod, Burton A., *Economics of Public Health*, University of Pennsylvania Press, Philadelphia, 1961. Present values are based upon American experience in 1950.

TABLE 12-3 ESTIMATED PRESENT VALUE OF LOST NET PRODUCTION RESULTING FROM DEATHS FROM DISEASES OF THE CIRCULATORY SYSTEM, CANADA, 1960, AT TEN PER CENT DISCOUNT RATE

Age Group	Male			Female			Both Sexes	
	Total Deaths in 1960	Present Value of Net Foregone Earnings at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Present Value of Net Foregone Earnings at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Total Present Value of Net Foregone Earnings
		\$	\$ '000,000		\$	\$ '000,000		\$ '000,000
0-4.....	17	1,897	.03	12	1,984	.02	29	.05
5-9.....	11	3,633	.04	8	3,753	.03	19	.07
10-14.....	12	7,611	.09	12	7,798	.09	24	.18
15-19.....	18	14,933	.27	20	15,315	.31	38	.58
20-24.....	29	22,415	.65	25	20,966	.52	54	1.17
25-29.....	53	26,258	1.39	40	21,515	.86	93	2.25
30-34.....	133	26,966	3.59	60	21,889	1.31	193	4.90
35-39.....	373	26,324	9.82	121	21,363	2.58	494	12.40
40-44.....	676	23,273	15.73	177	18,479	3.27	853	19.00
45-49.....	1,343	19,056	25.59	366	14,470	5.30	1,709	30.89
50-54.....	1,928	14,741	28.42	569	10,731	6.11	2,497	34.53
55-59.....	2,691	10,666	28.70	858	7,048	6.05	3,549	34.75
60-64.....	3,483	5,833	20.32	1,463	3,276	4.79	4,946	25.11
65-69.....	4,105	616	2.53	2,135	-62	-.13	6,240	2.40
TOTAL.....	14,872	—	137.17	5,866	—	31.11	20,735	168.28

Source: Table 12-2.

TABLE 12-4 ESTIMATED PRESENT VALUE OF LOST NET PRODUCTION RESULTING FROM DEATHS FROM ACCIDENTS, CANADA, 1960,
AT TEN PER CENT DISCOUNT RATE

Age Group	Male			Female			Both Sexes	
	Total Deaths in 1960	Present Value of Net Foregone Earnings at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Present Value of Net Foregone Earnings at Each Age	Total Present Value of Net Foregone Earnings	Total Deaths in 1960	Total Present Value of Net Foregone Earnings
		\$	\$ '000,000		\$	\$ '000,000		\$ '000,000
0-4.....	751	1,897	1.42	517	1,984	1.03	1,268	2.45
5-9.....	401	3,633	1.46	186	3,753	.70	587	2.15
10-14.....	347	7,611	2.64	112	7,798	.87	459	3.51
15-19.....	627	14,933	9.36	167	15,315	2.56	794	11.92
20-24.....	696	22,415	15.60	114	20,966	2.39	810	17.99
25-29.....	638	26,258	16.75	110	21,515	2.37	748	19.12
30-34.....	529	26,966	14.27	104	21,889	2.28	633	16.54
35-39.....	525	26,324	13.82	132	21,363	2.82	657	16.64
40-44.....	458	23,273	10.66	110	18,479	2.03	568	12.69
45-49.....	490	19,056	9.34	128	14,470	1.85	618	11.19
50-54.....	484	14,741	7.13	114	10,731	1.22	598	8.36
55-59.....	410	10,666	4.37	99	7,048	.70	509	5.09
60-64.....	343	5,833	2.00	111	3,276	.36	454	2.36
65-69.....	331	616	.20	112	—62	— .01	443	.20
TOTAL.....	7,030	—	109.03	2,116	—	21.17	9,146	130.20

Source: Table 12-2.

man years of potential work.¹ This is not to suggest that all the physically disabled and mentally ill can be rehabilitated but it has been represented to us that many can, either in part or in full.

Canadians have heard a great deal about the level of unemployment in their country which has been described as the highest among the industrialized nations of the world. In 1962 the unemployed averaged 391,000 for the year as a whole. The "silent" unemployed, the handicapped and the mentally ill, losing 237,000 man years of potential work are equivalent to about three-fifths of the number of persons actually unemployed.

A major part of Canada's economic policy has been to speed up the rate of economic growth, to strengthen the economic base of the country and to reduce the continuing high volume of unemployment to a more acceptable level. We believe that an equally strong case can be made to pursue policies which will reduce the number of the "silent" unemployed with great benefits to the individuals involved, their families and the nation as a whole.

The economic and social advantages to be derived from what we have described as the "silent" unemployed are great indeed. But such an objective cannot be achieved without cost. Further, despite the very substantial loss of production due to death and illness it is still true that such losses amount to a relatively small proportion of total output, and on the basis of present knowledge, all that could be achieved is a reduction of such losses, the degree of which would in part be determined by the efforts made by society to realize such an important objective.

The reduction of accidental death presents a great many problems. A sizeable proportion of the lost work-time caused by non-disabling diseases among those normally employed is produced by respiratory illness—the common cold—whilst among those not in the labour force because of mental illness, perhaps 40 per cent suffered from mental deficiency, many of whom were permanently unemployable. It would be utopian to believe that mortality, illness and disability among the working force could ever be eliminated. But if lost productivity from illness could be reduced by even one-third, say, \$500 million a year, this would be a sizeable contribution to the maintenance of those who must be maintained anyway if humanitarian considerations are not to be disregarded altogether.

¹ A number of examples were presented to us in our hearings of economic losses incurred due to illness. To illustrate: "A dramatic example of this waste is illustrated in the figures taken from Canadian Labour Congress 'Highlights,' Vol. 4, No. 5, May 1, 1961, which show that in 1960, while 747,120 man working days were lost by reason of strikes, 20,228,000 man days of employment were lost through illness. This is 27 times greater than the strike time lost although the strike time usually receives 27 times more publicity. Unemployment accounted for 141 times the strike time loss or 105,716,000 man working days". Brief submitted to the Royal Commission on Health Services by Robert M. Strachan, M.L.A. Leader of the Opposition, British Columbia, Victoria, B.C., February 1962, p. 8.

That there are benefits to be derived from the rehabilitation of workers cannot be over-emphasized. This is evident from the joint activities of the Federal Government and the provinces carried out through the Civilian Rehabilitation Programme and the Technical and Vocational Training Programme. A study of nearly 10,000 rehabilitated persons has been carried out by the Civilian Rehabilitation Branch of the Department of Labour. On the basis of what it would have cost to maintain those rehabilitated in 1961-62, and on the assumption that those rehabilitated in earlier years earned at least as much as those rehabilitated in 1961-62, it is estimated that in that year the savings in maintenance expenditures approached \$60 million, while the earnings of those employed amounted to over \$180 million.¹ There were, of course, costs incurred for medical, hospital, nursing and other health services which, on the average, amounted to \$1,000 for each person rehabilitated. There were, in addition, other costs incurred in providing health services for those who still were unable to work after receiving services. But taking these into account the success of the programme seems established. Other evidence has been presented by the Co-ordinating Council on Rehabilitation of Saskatchewan which indicated for a group of 71 people rehabilitated, the cost to the taxpayer for their support was reduced by \$54,580 annually. Each individual earned, on the average about \$2,000 a year.

Statistics obtainable to assist in an assessment of the economic costs of premature mortality and illness are limited and approximate. Still they are useful in that they indicate the order of magnitude of such costs. Table 12-5 brings together the monetary costs of a few selected diseases; mental illness, diseases of the circulatory system, accidents and cancer. The costs are estimated losses through mortality in 1960, production losses through illness and finally treatment costs. Mental illness was the most expensive amounting to an estimated \$535 million, followed by diseases of the circulatory system, \$409 million; accidents, \$241 million; and cancer, \$178 million. These figures while rough do give some indication of the areas where the greatest returns to health spending might be expected and what these returns might consist of. As is generally recognized mental illness was by far the most costly illness to Canadians both because of lost productivity and the cost of maintenance and treatment, and would have been much more costly if the mentally ill had been provided with as high quality hospital care as the physically ill. On the other hand, the losses generated by diseases of the circulatory system, cancer and accidents arise primarily from the premature death of Canadians in the most productive portions of their life, middle age, although the lost production and treatment costs were not insignificant.

¹ Data supplied by "Rehabilitation in Canada", Department of Labour; Ottawa: Queen's Printer.

COSTS AND BENEFITS

We have tried to identify the benefits that accrue as a consequence of expenditures on health services since identification of benefits is a logical step prior to the measurement of such benefits. We recognize that our discussion is limited by the inability at this time to quantify benefits in a definite manner, but we feel that the evidence is such as to support our judgment that the social and economic advantages derived from the reduction of premature mortality and illness have been large and that further benefits will accrue in the future. The allocation of research funds to cancer, accident or mental illness programmes, or to diagnostic and treatment services that led to a further reduction of illness and death, would certainly produce large benefits. On the other hand, an early detection of cancer which reduced mortality without reducing morbidity might have as its consequence an increase in treatment costs for those who continue to live, plus the economic loss of production needed to offset the extra consumption of a non-productive member of the society as is already the case for children with serious mental deficiencies.

We must therefore emphasize that the benefits from an expansion of health services cannot be achieved without cost. The provision of information about health hazards; the creation of an appropriate attitude towards risk; the provision of more scientists and scientific equipment along with the supporting staff for health research; the provision of more physicians, dentists, nurses to provide health care for those who do not at present receive it and the establishment of more diagnostic, treatment and rehabilitation centres for the mentally and physically disabled; all require that resources be allocated to health, unless they are unemployed, that could be used to satisfy other investment and consumption requirements. The awareness of the benefits to be derived from investment in human capital has recently led to the investigation of the relationship between this cost and benefit, and the data available for such an assessment are still limited and approximate. As yet we cannot speak of a return of 10 per cent from an investment in health services, or of a return of 9 per cent from an additional million dollars invested in research compared with a return of 11 per cent from an additional million dollars invested in a rehabilitation centre. Yet a choice must be made since sufficient resources will not be available to eliminate every disease. Some guide lines for public policy on health expenditures are, as we have indicated, vital and one guide line is the estimated economic benefits to be derived from the reduction of various illnesses. Pressures and special interests should not be allowed to determine the allocation of resources to specific diseases.

**TABLE 12-5 ESTIMATED VALUE OF LOST PRODUCTIVITY
FROM SELECTED DISEASES, CANADA, 1960-61**

Item	Mental Illness	Diseases of the Circulatory System	Accidents	Cancer
		'000,000		
Mortality.....	—	168	130	118
Morbidity.....	165	130	71	7
Treatment Costs.....	370	111	40	53
TOTAL.....	535	409	241	178

SOURCE: Madden, J. J., *Economics of Health*, and Kohn, R., *The Health Status of the Canadian People*; studies prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The national interest along with adequate planning and preparation, should be the basis determining priorities, and the pattern of an evolving integrated health programme for Canada. To assist decision makers in legislatures, governments, the health industry, and the public at large there is therefore need for continuing economic research and data processing with results being made public so that programmes and policies can be formulated with an adequate understanding of the costs of and benefits to be derived from current and additional health spending. This could be one of the functions of the Health Sciences Research Council which we propose.¹

¹ See Chapter 2, Recommendations 177-185.

PART IV

PRESENT PROBLEMS AND
FUTURE REQUIREMENTS

Personnel

INTRODUCTION

In a field as dynamic as health services in which new discoveries are almost commonplace, forecasts must be tentative. Nevertheless, planning is an essential element in the effective provision of health services and in the budgeting for the capital and operating costs of the vast industry serving health needs. The administrators and planners need projections. Possible obsolescence has to be reduced to a minimum by basing planning on the latest knowledge of existing and likely patterns, as well as by continual review and evaluation of the existing programmes. To wait for definitive answers to all existing problems, however, would mean the loss of the benefits to be derived from existing knowledge. Because tuberculosis sanatoria or mental hospitals are obsolete today, does not mean they should not have been built in the first place: without them progress could not have been achieved. Every new hospital begins to become obsolescent the day it opens its doors. This is unavoidable and it is part of the price of progress in all fields where technological advance plays a role. In some cases obsolescence can be forestalled; for instance, the buildings of a new mental institution can be designed in such a way that they can be used for other institutional purposes when they become an outmoded means of accommodating patients.

Any assessment of what the future holds for the major elements that make up the health services complex—the personnel, the facilities the financing, and the manner in which these elements are organized must take account of four factors which are related to social change in general, and changes in the health services complex in particular. These have been discussed in Chapters 4 and 11, but they are briefly mentioned here in order to reiterate their importance in the development of health services.

The first of these is population change in terms of size, age structure, mobility and rural to urban movement. With an annual net immigration inflow of 50,000 we expect the Canadian population to reach 35.1 million by 1991. By that year we expect that the number of children under fifteen

years of age will almost double, while the number of people aged sixty and over will more than double.¹ The mobility of our population is illustrated in Chapter 4 where we indicate that between 1948 and 1961 of all families receiving family allowances there was an increase from over 19 per cent to more than 26 per cent in families moving from one residence to another. There is little doubt that this trend will continue. Rural to urban movement shows significant changes; in 1901, 37 per cent of Canadians lived in urban areas, but in 1961 the proportion was 70 per cent.

The second important factor affecting changes in the health services complex is the rate of technical discovery and development. The technical application of old and new knowledge requires a skilled labour force. New skills and professions are based upon technical developments, and as these developments increase at an accelerating rate there is a proliferation of new skills and professional specialties.

The third factor promoting change is the increasing demand for services rather than material goods. Many of the new skills provide services. With the emergence of these additional services the demand for them grows. As a society becomes affluent the demand for services increases so that as incomes rise individuals increase their consumption of services such as entertainment, travel, education, and health care. This is a reflection of the demand for a higher and more diversified standard of living.

The role which the government plays in the operation of modern industrial societies is the fourth factor which must be taken into account when assessing past and future changes in society. As industrial societies become more complex citizens turn to their governments for increased activities in the economic sphere and attempts to provide increased opportunities for health and happiness for all individuals.

Keeping these four factors in mind we will assess the possibilities of supplying Canadians with the "best possible health care" by examining the trends in the supply of personnel and facilities, methods of organizing health care, and of financing it. This chapter examines the future supply of physicians, dentists and dental auxiliaries, and nursing personnel. The analysis of the future supply of pharmacists, and other health personnel will be undertaken in Volume II of this Report. Chapter 14 deals with certain developments in health facilities and their future supply. Developments in the organization of home care and rehabilitation services are analyzed in Chapter 15. The problems associated with the present and future supply, distribution cost and prices of drugs are examined in Chapters 16 and 17. One of the most significant problems facing the Commission is the problem of prepayment of health services and this is dealt with in Chapter 18.

¹ See Table 4-4.

FUTURE SUPPLY OF PHYSICIANS

How Many New Physicians?

We have noted in Chapter 7 that the number of active physicians at any point in time is determined by the balance between the inflow of medical personnel consisting of those graduating from medical schools, immigrant physicians, and those re-entering the profession after a period of temporary withdrawal from active practice, and the outflow which includes physicians who emigrate, retire or die. Estimates of the future supply of physicians based on the balance among these factors, however, can overlook certain vital features of future supply. For example, what will be the effect of technological change? Will it enable physicians to care for more patients? This can be expected if group practice develops and greater use is made of paramedical personnel. Some technological developments such as open heart surgery, may be of the opposite kind or what the economist calls "labour intensive". These require physicians to undertake procedures which could not be done before these developments were introduced or which were done by fewer physicians.

Can we expect the present rate of technological development in health care to continue? For example, in recent years, advances in drug therapy have enabled physicians to treat more patients more effectively. Can we expect a continuation of a trend such as this? Will the continuation of developments such as these offset the greater demands for health care which will arise as a consequence of population increase and rising expectations? Our inability to answer these questions in depth leaves us with the necessity of using a somewhat crude indicator, namely, the population-physician ratio (or another criterion which is the reciprocal of it, the number of physicians per 100,000 population). We realize that this ratio suffers from the inadequacies we have mentioned in Chapter 7, but it serves to indicate broad trends.

Table 13-1 shows the likely number of physicians that will be available between 1961 and 1991 on the basis of the maximum possible output of existing Canadian medical schools and l'université de Sherbrooke which plans to enrol its first medical students in the academic year 1967-68. The population-physician ratio will probably improve slightly during the period 1961 to 1971 from 856.6 to 852.9. After 1971, however, it will deteriorate unless expansion of educational facilities takes place. This is due to the fact that the population will continue to increase, the medical schools will have attained their maximum output with present facilities, and a decline in the number of immigrant physicians from 400 to 250 annually has been postulated after 1971.

TABLE 13-1 ESTIMATED SUPPLY OF PHYSICIANS AND CONSEQUENT POPULATION-PHYSICIAN RATIOS, CANADA, QUINQUENNIALLY, 1961-1991

Year	Estimated Number of Physicians Assuming Present Trends in Output*	Population-Physician Ratio**
1961.....	21,290†	856.6
1966.....	23,708	856.1
1971.....	26,486	852.9
1976.....	28,730	878.3
1981.....	30,702	920.0
1986.....	32,191	980.0
1991.....	33,417	1,050.6

*Based on expected output of medical schools without major expansion (except l'université de Sherbrooke which is included) in terms of resident Canadians admitted to intern year (total number less 10 per cent); 400 immigrant physicians to 1971, 300 to 1981 and 250 to 1991, and a composite attrition rate of 3 per cent applied annually.

**Population estimates based on a net immigration of 50,000 per year.

†Dominion Bureau of Statistics, *Census of Canada, 1961*, Vol. III, Part 1, Ottawa: Queen's Printer, 1963, Table 6.

SOURCE: Judek S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, and MacFarlane, J. A. *et al.*, *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The relationship between the output of physicians and the maintenance or improvement of the population-physician ratio is shown in Table 13-2. Column (1) gives the number of physicians available if no additional medical school facilities are built. This column is the same as Column (1) of Table 13-1. Column (2) shows the number of physicians required in order to maintain the 1961 population-physician ratio of 857. Column (3) shows a surplus or deficit. Column (4) provides an estimate of the number of physicians needed to improve the population-physician ratio at the same rate at which it improved during the previous decade. The estimates suggest that there will be a shortage in 1991 of 7,547 physicians on the basis of the assumption in Column (2) and a shortage of 19,375 physicians on the basis of the assumption in Column (4).

These two sizeable deficits indicate that the problem of providing sufficient medical school facilities to supply Canadians with the present or an improved level of medical services requires *immediate* attention, but which of the two assumptions on which these estimated deficits are based is the more realistic? We believe that the maintenance of the 1961 population-physician ratio is a more realistic goal than attempting to continue the rate of improvement in the ratio occurring between 1951 and 1961. Therefore, our minimum requirements will be an additional 7,547 physicians by 1991.

TABLE 13-2 PROJECTED SUPPLY OF PHYSICIANS AND TWO SCHEDULES OF POSSIBLE REQUIREMENTS AND THE SURPLUSES AND DEFICITS ASSOCIATED WITH THEM, CANADA, QUINQUENNALLY, 1961-1991

	(1)	(2)	(3)	(4)	(5)
Year	Estimated Number of Physicians Available on the Basis of Present Trends in Output*	Estimated Number of Physicians Needed to Maintain the 1961 Population-Physician Ratio (857)**	Surplus or Deficit (2)-(1)	Estimated Number of Physicians Needed to Improve the Population-Physician Ratio at the Rate of Improvement Experienced in 1951-61†	Surplus or Deficit (4)-(1)
1961.....	21,290††	21,290	—	—	—
1966.....	23,708	23,683	+ 25	24,691	- 983
1971.....	26,486	26,358	+ 128	28,714	- 2,228
1976.....	28,730	29,443	- 713	33,421	- 4,691
1981.....	30,702	32,959	-2,257	39,068	- 8,366
1986.....	32,191	36,809	-4,618	45,520	-13,329
1991.....	33,417	40,964	-7,547	52,792	-19,375

*See Table 13-1, note *

**The ratio in 1961 was 857. Population estimates based on net immigration of 50,000 annually.

†Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 8.

††Dominion Bureau of Statistics, *Census of Canada, 1961*, Vol. III, Part 1, Ottawa: Queen's Printer, 1963, Table 6.

SOURCE: Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, and MacFarlane, J. A., et al., *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services: Queen's Printer, Ottawa, 1964.

An important factor in the rate of improvement in that decade was the continued high level of immigration of physicians, an average of 461 each year. Without these immigrant physicians our population-physician ratio would have deteriorated. The question before us is: Will other countries continue to provide a large part of our requirements for physicians in the future? This is unlikely in the long run, although reports of the number of immigrant physicians entering Canada since 1961 indicate that a high level of immigration is continuing. In the short run until 1971, therefore, there is a strong possibility that the level may continue at about 400 immigrant physicians annually. In subsequent years the number will probably decline. Assuming that this rate of inflow continues until 1971, to what extent can our present medical school facilities be expanded, and how quickly can new medical schools be built to provide the required number of physicians?

The deans of the twelve existing Canadian medical schools have indicated, and our evidence supports their assertion that the present student intake could be increased by about 15 per cent from 1,000 in 1961-62 to 1,147 in 1965-66.¹ Allowing for a student attrition rate of ten per cent for the four years of medical school training this should yield 1,032 admissions to the intern year 1969-70. A further loss of 10 per cent when non-residents return to their own countries would leave 929 physicians to be added to the medical manpower of the country. In order to further expand our supply of physicians, facilities of existing medical schools must be expanded to enrol 82 additional first-year Canadian students annually, commencing in 1966-67, in addition to any new places allocated to foreign students. Allowing for the 10 per cent undergraduate attrition rate, this should yield 75 additional physicians annually commencing in 1970. Subsequent to graduation, the physician-population would be decreased by an annual attrition rate of 3 per cent due to emigration, retirement and death.

In order to further increase our supply of physicians we conclude that four new medical schools must be built by 1971-72, and a fifth shortly thereafter. The four new schools should each admit 48 students in their first year of operation, and 64 in their second year. Allowing for the student attrition rate of 10 per cent and the subsequent 10 per cent loss for the non-residents, intake of the 48 students would yield 39, and the intake of 64 students would yield 52 in the respective final year.

To meet later requirements existing schools must be expanded and new ones constructed to increase enrolment by 32 additional students in 1972-73, 64 students in 1973-74, 96 students in 1974-75 and so on. In

¹ MacFarlane, J. A., *et al.*, *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 11.

other words, there must be an annual increment of 32 students *each* year commencing 1972-73.

The method of increasing our supply of physicians in order to maintain the 1961 population-physician ratio is set out in Table 13-3. This table also provides an estimate of the increase in the numbers of physicians if new medical facilities are built and existing facilities expanded as described above, while Table 13-4 indicates the manner in which these changes affect the total number of first-year students. The improvement in the population-physician ratio as a consequence of the implementation of our recommendations is evident. With existing trends in output of medical schools, the population-physician ratio improves until 1971 when it begins to worsen, whereas with the expansion of educational facilities the ratio continues to improve until 1986. If the present ratio is to be maintained after that date, additional medical schools will have to be built, or existing schools enlarged further, at the latest by 1982.¹

Estimates such as the foregoing are approximate and must be reassessed periodically in the light of developing circumstances, but they make clear that Canada cannot afford to waste time in laying the foundation for an increasing supply of domestically trained physicians. Since the planning and building of a new medical school require between eight to ten years, the planning for the first of four additional medical schools should be undertaken forthwith, and for the fifth within the next two years.² The most important aspect of this planning is the provision of an adequate number of suitably qualified teaching staff.

Faculty Requirements

Standards for the measurement of faculty requirements of Canadian medical schools are noticeable by their absence. Averages of the 12 Canadian medical schools are sometimes used for this purpose, but since the problems affecting the medical schools in different regions of the country are dissimilar in some respects, such averages are of limited value. Standards regarding the staffing policy of medical schools have been published by a United States' study group as shown in Table 13-5.

Two sizes of medical school are considered consisting of first-year classes of 64 and 96 students respectively. Since most faculties in the smaller Canadian medical schools have substantial and increasing teaching responsibilities for non-medical students, the level of 35 full-time basic science teachers for schools with first-year classes of 64 students is inadequate for Canadian medical schools of this size. Further, in the discussion of the

¹ For a more detailed discussion of the methods used in these estimates, see MacFarlane, J. A., *et al.*, *op. cit.*, Chapter 11.

² We suggest locations for these five medical schools in Chapter 2, Recommendation 141.

TABLE 13-4 NUMBER OF PLACES IN FIRST-YEAR CANADIAN MEDICAL CLASSES TO BE FILLED 1962-63 TO 1987-88 AS REQUIRED FOR PROJECTION OF PHYSICIAN SUPPLY TO 1991*

Year	First Year Places Projection B	Increments from Various Sources							Total Number of First-year Places	Increment for Year
		Canadian residents	l'université de Sherbrooke	New School No. 1	New School No. 2	New School No. 3	New School No. 4	Annual increase by 32 from 1972-73 to 1987-88		
1962-63	1,057	—	—	—	—	—	—	—	1,057	—
1963-64	1,087	—	—	—	—	—	—	—	1,087	30
1964-65	1,117	—	—	—	—	—	—	—	1,117	30
1965-66	1,147	—	—	—	—	—	—	—	1,147	30
1966-67	1,147	83	—	—	—	—	—	—	1,230**	83
1967-68	1,147	83	—	—	—	—	—	—	1,270	40
1968-69	1,147	83	40	—	—	—	—	—	1,328	58
1969-70	1,147	83	50	48	—	—	—	—	1,406	78
1970-71	1,147	83	64	64	48	—	—	—	1,470	64
1971-72	1,147	83	64	64	64	48	—	—	1,534	64
1972-73	1,147	83	64	64	64	64	48	—	1,582	48
1973-74	1,147	83	64	64	64	64	64	32	1,614	32
1974-75	1,147	83	64	64	64	64	64	64	1,646	32
1975-76	1,147	83	64	64	64	64	64	96	1,678	32
1976-77	1,147	83	64	64	64	64	64	128	1,710	32
1977-78	1,147	83	64	64	64	64	64	160	1,742	32
1978-79	1,147	83	64	64	64	64	64	192	1,774	32
1979-80	1,147	83	64	64	64	64	64	224	1,806	32
1980-81	1,147	83	64	64	64	64	64	256	1,838	32
1981-82	1,147	83	64	64	64	64	64	288	1,870	32
1982-83	1,147	83	64	64	64	64	64	320	1,902	32
1983-84	1,147	83	64	64	64	64	64	352	1,934	32
1984-85	1,147	83	64	64	64	64	64	384	1,966	32
1985-86	1,147	83	64	64	64	64	64	416	1,998	32
1986-87	1,147	83	64	64	64	64	64	448	2,030	32
1987-88	1,147	83	64	64	64	64	64	480	2,062	32
								512		

*This reflects the output from newly created facilities as set forth in Table 13-3. Theoretically, there should be a further increase in the rate of expansion of first-year intake beginning around 1981, counting both resident and non-resident students, 10 per cent of graduates assumed to be non-resident (except for group of 83 Canadian resident students starting 1966-67, yielding 75 interns from 1969-70).

**To the extent that 83 additional Canadian residents replace non-resident first-year students the requirement of "new places" in the first-year medical class will be reduced. The 1966-67 total, therefore, of 1,230 required places might be only 1,200 or 1,175.

SOURCE: MacFarlane, *et al.*, *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

estimated future student enrolment required to provide the number of physicians needed to maintain the population-physician ratio of 857 in future quinquennia, we indicated that the present 12 Canadian medical schools would need to increase their enrolment. This would place an additional strain on the small as well as the large schools. In fact, with the additional enrolment the smaller schools with an average intake of 68 students would approach half-way towards the 96 average. According to MacFarlane, therefore, in the small Canadian schools which he designates as Group A, in Table 13-6, an average of 40 basic science teachers is regarded as minimal.¹ Table 13-5 indicates that small schools with first-year classes of 64 students, 60 full-time teachers are required in clinical departments (excluding Pathology, but including Preventive Medicine). MacFarlane suggests that in Canada this figure is higher than necessary.

"We are committed to the principle of a substantial core of either strict or geographic full-time teachers in the clinical subjects; at the same time *we would use a larger number of part-time teachers than is the goal in many American schools.* An increase from the 1961/62 average of 28.1 to 45 clinical full-time teachers is postulated to meet the needs of the immediate future."²

Table 13-6 sets out the estimate of full-time teachers required in the existing and new Canadian medical schools for the period 1964-71.³

The larger medical schools Laval, Montreal, McGill and Toronto, which are designated as Group B in Table 13-6 had an average of 136 students in the first year in 1963-64.⁴ MacFarlane suggests that the 50 basic science teachers for a school of 96 students indicated by United States authorities and noted in Table 13-5 are inadequate for these larger Canadian medical schools. Their number should be increased at least to 60.⁵ The 85 full-time clinical teachers suggested as adequate for schools of 96 students by the United States authorities were considered by MacFarlane to be adequate.⁶

The new schools required to meet our estimates of the future requirements for physicians should be built to accommodate a class of 64 with the possibility of future expansion. For these schools MacFarlane suggests as a beginning, 32 basic science teachers and 35 full-time clinical teachers.⁷

These new faculty posts total 770 of which 282 are in the basic sciences and 488 in the clinical division. In other words, each year over the

¹ MacFarlane, J. A., *et al.*, *op. cit.*, Chapter 12.

² *Ibid.*

³ Additional staff will be necessary for the fifth medical school which will be required in the early nineteen-seventies.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

TABLE 13-5 ASSUMED FACULTY, GRADUATE STUDENTS, AND POST-DOCTORAL FELLOWS FOR A 4-YEAR MEDICAL SCHOOL

Type of Position and Department	School A (entering class of 64 students)	School B (entering class of 96 students)
Full-time faculty:		
School total.....	95	135
Basic science departments.....	35	50
Anatomy.....	7	10
Biochemistry.....	6	9
Physiology.....	6	8
Microbiology.....	5	7
Pathology.....	6	9
Pharmacology.....	5	7
Clinical science departments.....	60	85
Medicine.....	18	25
Surgery.....	15	21
Pediatrics.....	5	8
Obstetrics.....	3	4
Psychiatry.....	10	14
Radiology.....	5	7
Preventive medicine.....	4	6
Graduate students and postdoctoral fellow: School total..	70	95
Basic science departments.....	40	55
Anatomy.....	7	10
Biochemistry.....	10	14
Physiology.....	6	8
Microbiology.....	6	8
Pathology.....	6	8
Pharmacology.....	5	7
Clinical science departments.....	30*	40*
Medicine.....	8	11
Surgery.....	5	7
Pediatrics.....	3	4
Obstetrics.....	1	1
Psychiatry.....	8	10
Radiology.....	3	4
Preventive medicine.....	2	3

*Does not include house staff for hospital.

SOURCE: U.S. Public Health Service, *Medical School Facilities—Planning Considerations*. Publication No. 874, Washington, D.C.: United States Government Printing Office, 1961. Prepared by the joint efforts of the U.S. Public Health Service and the Ad Hoc Committee on Medical School Architecture of the Executive Council of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. (Appendix A.)

next seven years Canadian universities must obtain an average of 40 new basic science teachers and 70 full-time clinical teachers as well as replacements for the present faculty who may emigrate, retire or die.

TABLE 13-6 ESTIMATE OF ADDITIONAL FULL-TIME TEACHING POSTS REQUIRED IN TWELVE EXISTING AND IN FIVE NEW MEDICAL SCHOOLS IN CANADA, 1964-71

Present faculty supply and norms for expansion are arranged according to academic division and class size.

Group A: 8 schools, average class 67.5, range 48-92.*

Group B: 4 schools, average class 136, range 119-162.

New schools: in this table Sherbrooke is classified as a new school.

One school to open each year from 1967-68.

Academic Divisions and Projection Categories	Numbers of Faculty			
	Group A (8 Schools)	Group B (4 Schools)	New Schools (5)	Total New Faculty Posts
<i>Basic Medical Sciences</i>				
Total faculty posts in 1961-62.....	273	166	—	—
Average per school.....	34.1	41.5	—	—
Range.....	26-47	26-60	—	—
PHS-AMA-AAMC proposal.....	35	—**	35	—
Norm adopted.....	40	60	32	—
Deficit per school.....	5.9	18.5	—	—
No. of posts required in group.....	48	74	160	282
<i>Clinical Division</i>				
Total faculty posts in 1961-62.....	225	162	—	—
Average per school.....	28.1	40.5	—	—
Range.....	14-53	8-83	—	—
PHS-AMA-AAMC proposal.....	60	—**	60	—
Norm adopted.....	45	85	35†	—
Deficit per school.....	16.9	44.5	—	—
No. of posts required in group.....	135	178	175	488
Total new posts in basic science and clinical divisions.....	—	—	—	770

*Based on 1963-64 registration. Earlier definitions of Groups A and B used data for 1961-62, when average enrolment was 60.4 and 128, respectively.

**The American study committees' proposals were for schools of 64 and 96 student class size. For the latter, 50 basic science and 85 clinical teachers were suggested. (See Table 13-5.)

†This target of 35 is for only the first stage of the new school's evolution. In due course it should rise to 40 or 45.

SOURCE: MacFarlane, J. A., *et. al.*, *Medical Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

This is a major task facing us because at the present time we cannot find sufficient numbers of adequately trained faculty members in Canada. In 1962-63 we depended for 40 per cent of our basic science posts on graduate scientists from abroad. The opportunities for obtaining qualified clinical teachers is somewhat more encouraging. In the seven-year period 1954-60, a total of 997 physicians and surgeons gained fellowship in the Royal College of Physicians and Surgeons of Canada, and 2,707 were certificated by that body for specialty practice.¹ It should be possible to find 488 full-time

¹ *Ibid.*, Chapter 9.

teachers in the future.¹ The chief problem will be that of protecting their teaching and research responsibilities from excessive demands for clinical service.

Conditions Necessary for Establishing New Medical Schools

Since the expansion of the supply of physicians to meet the increased demand for medical care requires the building of at least four new medical schools before 1971 and a fifth one, shortly thereafter, what principles should guide those responsible for their planning and construction? In Chapter 7 we referred to the emergence in recent years, at the University of British Columbia and l'université Laval of the health sciences centre in which adequate teaching and research facilities are available to provide a co-ordinated educational programme not only for the physician, but for his other professional and auxiliary colleagues as well. MacFarlane states the goals of such a centre should be:

1. to produce its share of the health personnel needed;
2. to ensure adequate continuing educational opportunities for both professional and auxiliary personnel;
3. to establish models of health care of high standard for its constituent region;
4. to conduct research of appropriate substance and diversity, not only to advance knowledge in the fields of science essential to medicine but also to evaluate (a) its own educational operations, (b) the health needs of the community, and (c) the quality of the care being rendered.²

The decision to establish a new medical centre in a particular region of the country whether it be a health science centre or the traditional medical school should be based on a thorough study of the region's requirements for the various types of health personnel, and "of standards to be elevated and of new programmes to be instituted".³ Having made such a decision what are the conditions which must prevail to assure that the new institution attains the above goals?⁴

University Auspices—Any new medical centre must be under university auspices in the same city, for only in the university can there be developed the close relationship between teaching and research so vital

¹ Chapter 2, Recommendation 149.

² *Ibid.*, Chapter 12.

³ *Ibid.*

⁴ The following discussion of the conditions necessary for the establishment of new medical schools is described in more detail in *ibid.*, Chapter 12.

to modern medicine. As medicine advances, the co-operative team approach to health problems, requiring the skills of physicians, dentists, nurses, pharmacists, clinical psychologists, laboratory and other technologists, and others, will become increasingly important.

"Academics whose collaboration is now being sought include the new brands of molecular biologist and geneticist, histochemist, biophysicist and electronics engineer, the social scientist specializing in health matters, the systems analyst, the experts in public administration and in community development and the research worker in education itself. Even teachers in the humanities have been pressed into service in several American universities because of new programmes calling for their help in seminars for medical students and faculty. In short, more than ever before, good medicine in its broadest sense depends upon the diversified scholarship of the modern university."¹

Community Participation in Planning—The co-operation of the community in which the new centre is to be located is important to its success. The citizens of the community should understand the need for the centre, the benefits which its location there will provide, and be ready to participate as patients in the teaching process. The community leaders should be aware of the costs of the venture and the other possible difficulties involved.

Government Support—The establishment of a modern medical centre is such an expensive undertaking that it requires substantial capital and operating funds. Just as important is government understanding of the implications of scientific developments for modern medical education. Government financial support should be specified in terms of ten teaching hospital beds under full university control for each final year student plus service for out-patients.

Educational Resources—A sufficient number of qualified secondary school students should be available, of which an appropriate proportion should come from rural areas. Our studies suggest that since there is a tendency for medical graduates to return to their home communities, by providing an appropriate proportion of students from rural areas, these areas would be assured of an improved supply.²

An adequate number of qualified and experienced faculty in the related physical, biological and social sciences would assure the intellectual climate which promotes an experimental approach to both old and new problems. While the criteria required to measure the academic strength of faculty are available in terms of a graduate degree programme in the physical, biological and social sciences, no such criteria are on hand to indicate the quality of the experimental viewpoint so necessary for a successful medical

¹ *Ibid*, Chapter 12.

² Judek, S., *op. cit.*, Chapter 1.

centre. But, if an undergraduate teaching agenda "in a basic science subject has not changed substantially in 10 years it is unlikely to be suitable for the preparation of professional workers destined to cope with a changing scientific base for the rest of their lives".¹

Support of Related Professional Bodies—The university should be concerned directly with a small segment of the community's medical care. The family care teaching and research unit of the medical centre provides a valuable experience for the medical student. This requires the understanding and co-operation of the practising physicians in the community. Co-operation between the medical centre and the related professional bodies would also serve to further the aims of the continuing medical education programme of the centre.

Teaching Hospital Facilities—A vital part of any new medical centre is a teaching hospital which is under strict university control. Today Canada has several hospitals that could be called integrated teaching hospitals. In most cases teaching arrangements are made with affiliated and associated hospitals.

The School of Basic Medical Science

In order to expand our resources rapidly, there is a strong case for some universities, not now large enough to justify a full four-year medical school, to consider establishing a two-year basic medical science school. The most recent experience with this type of school was at the University of Saskatchewan which between 1925-55 operated its "Two Year Medical School", establishing the full four-year programme in 1956. After two years in the Faculty of Arts and Science the student entered the School of Medical Science. Following this two-year programme a further two clinical years were taken at another university offering the full course. Although there are arguments against the two-year school, the importance of increasing the supply of physicians warrants further consideration of this type of programme.² MacFarlane quotes Tenney to support this view.³

"In recent years the spectre of a serious shortage of physicians has induced a number of States to consider the two-year school as partial solution. They have noted that openings in the clinical years exceed the output of students prepared in the years devoted to basic science. This is due partly to attrition from failure at examinations, or from change of interest during the first two years of the medical course, and partly due to the comparative abundance of opportunities for clinical teaching. It might be

¹ MacFarlane, J. A., *et al.*, *op. cit.*, Chapter 12.

² Chapter 2, Recommendation 174.

³ Tenney, S. M., quoted in *Medical Education and Research Needs* in Maryland, Baltimore, Maryland State Planning Commission, 1962, p. 45, as quoted in *ibid.*

corrected by increasing the admission to the pre-clinical years, made possible by the provision of more facilities for laboratory training. More important, however, has been a fresh argument advanced on educational grounds. This has sufficient merit in it to warrant discussion.

"Attention was directed in Chapters 2 and 3 to the efforts of certain universities to integrate the basic "pre-medical" experience with study in the specifically medical sciences. To the extent that this could be a continuum in the learning process, with the student gaining each year an experience in greater depth in his subject, it would present clear advantages in terms of educational quality. This would be still more the case if much of the work were at the usual level of graduate studies. The argument for the distinctive academic opportunities of the two-year school has been put forward well in the case of Dartmouth. This institution has enjoyed an enviable reputation for the quality of both students and instruction. Although linked with an excellent teaching hospital in which second-year students are introduced to clinical subjects, Dartmouth has resisted pressure to expand to a full four-year program. Its emphasis on research has induced an increasing proportion of Dartmouth students to move, after completing second-year medicine, into a Ph.D. course in one of the basic sciences. As many as 25 per cent did this recently; an admirable pathway to medical science teaching."

In such a two-year programme:¹

"Graduate teaching in human biology . . . would become a living bridge between the ever-expanding physical, chemical and social sciences and the phenomenal demands of the medical and health services of the nation and the world. The newer concepts of health and of medical research and of professional education embrace philosophy, economics, anthropology and mathematics in varying degrees. The creation of integrated investigations and instruction in human biology would put added emphasis on the development of broadly trained leaders for the next generation of medical teachers and practitioners."²

The Problem of Recruitment

We have indicated that in order to make our estimates a reality, an expansion of medical education facilities is vital. To ensure that these facilities are fully used, it is equally important to attract a sufficient number of students into medicine. There has been a relative decline in medical student enrolment in Canada since 1953-54. This is shown in Table 13-7 which compares the enrolment of medical students with total university enrolment. While the number of medical students fluctuated around 3,500 during the decade preceding 1960-61 their number per 100,000 population decreased from 25.4 to 19.6. In other words the enrolment of medical students failed to keep pace with our population increase.

¹ Rappleye, Willard C., "Critique of Report on Medical Education", in *Medical Education and Research Needs in Maryland*, Committee on Medical Care, Maryland State Planning Commission, Baltimore, January 1962, p. 106.

² MacFarlane, J. A., *et al.*, *op. cit.*, Chapter 12.

TABLE 13-7. MEDICAL STUDENT ENROLMENT AND TOTAL UNIVERSITY STUDENT ENROLMENT PER 100,000 POPULATION, CANADA, 1947-48 TO 1960-61

Year	Medical Student Enrolment*		Total University Student Enrolment		Total University Student Enrolment Minus Medical Student Enrolment		Population '000
	Number	Per 100,000	Number	Per 100,000	Number	Per 100,000	
1947-48	3,100	24.7	78,205	623.1	75,105	598.4	12,551
1948-49	3,233	25.2	74,797	583.3	71,564	558.1	12,823
1949-50	3,278	24.4	68,480	509.3	65,202	484.9	13,447
1950-51	3,489	25.4	63,942	466.3	60,453	440.8	13,712
1951-52	3,458	24.7	59,634	425.7	56,176	401.0	14,009
1952-53	3,444	23.8	59,826	413.8	56,382	390.0	14,459
1953-54	3,643	24.5	60,737	408.9	57,094	384.4	14,845
1954-55	3,589	23.5	64,669	423.0	61,080	399.5	15,287
1955-56	3,651	23.3	68,768	438.0	65,117	414.8	15,698
1956-57	3,655	22.7	72,624	451.6	68,969	428.9	16,081
1957-58	3,686	22.2	80,443	484.3	76,757	462.1	16,610
1958-59	3,668	21.5	88,006	515.3	84,338	493.8	17,080
1959-60	3,549	20.3	94,928	542.9	91,379	522.6	17,483
1960-61	3,508	19.6	105,911	592.7	102,403	573.1	17,870

*Excludes pre-medical and post-graduate students.

SOURCE: Medical student enrolment has been computed from the Educational Issues of the American Medical Association Journal. Total university student enrolment has been computed from the files of Higher Education Section, Education Division, Dominion Bureau of Statistics.

A significant barrier to the applicant is the high cost of medical education. Table 13-8 shows that the average expenditure by medical students in the year 1961-62 was exceeded only by dental students. About one-half of our medical students have a total annual expenditure of \$2,000 or more. Only one-tenth of the students in arts and science incur expenditures of this magnitude. The average medical student spends about one-half more than the average engineering student and about two-thirds more than the average arts and science student.

Many of the briefs submitted to this Commission recommend financial assistance to undergraduate medical students in order to increase the supply of physicians in Canada. Opinions are divided on the question of whether this assistance should be in the form of additional loan funds, or bursaries and scholarships. Some expressed the view that the prospect of incurring substantial debts in order to study medicine restricts the number of recruits.

The Canadian Association of Medical Students and Interns has recommended that "the Government of Canada make available to a central fund

TABLE 13-8 MEDICAL AND OTHER STUDENTS' AVERAGE EXPENDITURE, FOR REGIONS AND CANADA, 1961-1962

Faculty and Region	Average Expenditure
	\$
<i>Medicine</i>	
East.....	2,606
Quebec.....	2,205
Ontario.....	2,272
West.....	2,162
<i>Canada</i>	2,246
Arts and Science.....	1,352
Education.....	1,415
Engineering.....	1,553
Law.....	2,050
Dentistry.....	2,465
Pharmacy.....	1,550

SOURCE: Dominion Bureau of Statistics, *University Student Expenditure and Income in Canada, 1961-62*, Part II—Canadian Undergraduate Students, Ottawa: Queen's Printer, 1963, Table 35.

or foundation appropriate grants of money to be used as interest-free loan capital in the support of the undergraduate medical students".¹ The College of Medicine, University of Saskatchewan, suggested that "a grant of at least \$500 per medical student per year be made to Universities from federal sources to permit free tuition for students of medicine".² The Faculty of Medicine, University of Alberta, suggested the following financial assistance measures:

- "(i) Free Tuition: To all students in their third and fourth years of medicine.
- "(ii) Scholarships: In the amount of \$1,000 per year to those in the upper third of the class in the last three years.
- "(iii) Loan Funds: Available to any student in any year with a proven need in an amount not exceeding \$5,000 during his undergraduate study period. Such loans would be interest free until 12 months after graduation. Interest would then be at the prevailing bank interest rates."³

¹ The Canadian Association of Medical Students and Interns, brief submitted to the Royal Commission on Health Services, Ottawa, March 20, 1962, p. 2.

² The College of Medicine, University of Saskatchewan, brief submitted to the Royal Commission on Health Services, Regina, January 25, 1962, p. 5.

³ The College of Physicians and Surgeons, Province of Alberta; The Canadian Medical Association, Alberta Division, and The Faculty of Medicine, University of Alberta, Edmonton, Alberta, brief submitted to the Royal Commission on Health Services, Edmonton, February 13, 1962, p. 60.

The Faculty of Medicine, University of Toronto, recommended as follows:

- “(a) that students with Grade A standing receive free tuition plus one-half loan and one-half bursary to carry on their maintenance;
- “(b) that students with Grade B standing should receive one-half free tuition and their maintenance in half loan and half bursary;
- “(c) that students with Grade C standing should be evaluated and supported in accordance with their individual situations.”¹

Some provinces provide financial assistance to medical students. This takes various forms depending on the province. For example, in Newfoundland an annual bursary is available for residents studying medicine; and in Saskatchewan the Medical Care Insurance Commission awards scholarships and bursaries to medical students.²

An important factor affecting the supply of recruits for the medical profession is the length of time required to qualify as a physician. In its brief to the Commission the Association of Canadian Medical Colleges noted the suggestion that consideration be given to lengthening the medical school term from an average of 32 weeks to 45 weeks, permitting the complete undergraduate curriculum to be completed in three calendar years or that the fourth year of the course be converted to a year of internship, thus reducing the total period of graduate training by one year.³

In the choice of an occupation or profession a major incentive is income. Besides affecting recruitment into the medical profession, the level of income has a direct bearing on the rate at which physicians retire from practice and the rates of immigration and emigration of physicians. We suggest that the large numbers of physicians immigrating to Canada, a total of 445 in 1961, in part, was due to the prevailing income levels of physicians.⁴

Most indicators show that an increasing financial incentive for Canadian physicians has developed in recent years. A study of physicians' average incomes, based on published and unpublished data⁵ reveals that from 1957 to 1960 physicians' average net fee income (i.e., gross fee income less expenses of practice) increased by 19.1 per cent from \$12,708 to

¹ Faculty of Medicine, University of Toronto, brief submitted to the Royal Commission on Health Services, Toronto, May 14, 1962, p. 6. See also Judek, S., *Medical Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 3.

² Chapter 2, Recommendation 144.

³ The Association of Canadian Medical Colleges, brief submitted to the Royal Commission on Health Services, Toronto 1962, pp. 5 and 6.

⁴ See Chapter 7.

⁵ Estimates based on data supplied by the Taxation Division of the Department of National Revenue and analysed by the Research and Statistics Division of the Department of National Health and Welfare. The income data which follow are taken from this source.

\$15,130. The per capita personal income of all Canadians increased by 9 per cent during the same period.¹ While some technical reservations may be made in comparing "real income" increases between physicians and all occupations² such a comparison would indicate that physicians' purchasing power increased by 13 per cent while that of all occupations increased by less than 4 per cent.

Physicians' average expenses of practice relative to gross fee income declined steadily from 38.6 to 35.9 per cent of the gross amount received through fees. Accordingly, net fee income increased at a more rapid rate than either gross fee income or expenses of practice. Average gross fee income was reported to have increased from \$20,701 in 1957 to \$23,616 in 1960 or by 14.1 per cent. Average expenses of practice grew over this period by 6.2 per cent from \$7,993 to \$8,486.

Expenses of practice as a portion of gross professional income were lower for physicians than for all professions. In 1959, while physicians expenses represented 37 per cent of their gross fee income, the expenses of all professions were 47 per cent of gross professional income. This differential existed in every province. The respective percentages that expenses represented of all professional income in 1960, were 36 per cent for physicians and 46 for all professions.

Physicians' average net income from all sources led that of other professions in 1960 and stood at \$16,323. Engineers and architects earned \$15,670; lawyers and notaries were third with \$14,597; dentists averaged \$12,238 and stood in fourth place while accountants earned an average of \$11,446. Among these professions the average incomes of physicians and dentists alone showed regular uninterrupted annual increases since 1953; the other professions mentioned above showed decreases in at least some years. This suggests that among the leading income earning occupations the incomes of physicians and dentists are the least vulnerable to cyclical influences.

Physicians in rural areas showed the lowest net fee earnings throughout the period from 1957 to 1960; the levels of earnings for consecutive years were \$11,889, \$12,920 and \$13,528. During this period however, rural physicians' fee incomes moved closer to the national average. In 1958 the average level of rural net fee earnings stood at 84 per cent of the national average. By 1960 it had increased to 88.6 per cent of the average earnings in all areas.

The highest levels of average net fee earnings were consistently recorded in cities between 30,000 and 100,000 population. The figures for the three years were: 1958—\$16,439; 1959—\$16,906; and 1960—\$17,889.

¹ A direct comparison of these rates of change requires that one assume a steady relationship between the average number of dependants of physicians and the average number of dependants of persons in all occupations.

² That is, current dollar figures deflated by the consumer price index.

The ratio of net fee to gross fee earnings was remarkably stable over the three-year period. For each year rural physicians showed the lowest ratio of net to gross fee income and physicians in cities of from 100,000 to 199,999 population showed the highest ratio. The gap between these ratios narrowed only slightly. In 1958 rural net fee income was 58.9 per cent of gross fee income while the corresponding percentage figure for physicians in 100,000 to 199,999 population areas was 69.7 per cent. By 1960, the respective figures were 59.3 per cent and 69.8 per cent.

It is generally accepted that medical care insurance coverage encourages the utilization of physicians' services. An interesting aspect of this phenomenon is the relationship between physicians' fee income and the extent of coverage by medical insurance programmes. In 1959 and 1960, the only years for which studies were undertaken, for provinces in which the proportions of the population covered by insurance or other prepaid arrangements were above or below the national average of 52.2 per cent in 1959 and 54.7 per cent in 1960, the gross professional fee earnings of physicians tended correspondingly to be above or below the national average of earnings. This relationship existed in all provinces except Alberta. In other words, as forms of medical care insurance cover an increasingly larger proportion of the population in each province, the incomes of physicians tend to increase. This should provide an incentive to those considering the medical profession as a possible career.¹

Method of Remunerating the Physician

In discussing the supply of physicians we have dealt with the income of the profession as a necessary incentive for qualified young men and women to enter the profession, to continue to practise in Canada, and to maintain and improve the standard of care they provide. Although our hearings have produced widely differing views on many aspects of the organization of medical care and its financing, there is unanimous agreement on the point of the amount of remuneration. It must be commensurate with the time and money spent on education, with the physician's responsibility, his contribution to society, and his needs for continuing study.

As to method of remuneration there is no such unanimity. The professional organizations of physicians and dentists advocate the fee-for-service principle.² The Canadian Medical Association concedes that the amount of

¹ For estimates of what increases in incomes physicians may expect assuming the introduction of a comprehensive medical care programme in Canada, see Chapter 20.

² The Canadian Medical Association, brief submitted to the Royal Commission on Health Services, Toronto 1962, pp. 79-81; Canadian Dental Association, brief submitted to the Royal Commission on Health Services, Ottawa, 1962, p. 43.

remuneration under a medical plan is negotiable, but reserves the right to determine the method of payment to the physician through their organization.¹ Labour groups favour the salary method² of paying physicians under a medical care plan.³ The lines between producers and consumers of services are not clearly drawn, however, in regard to this subject. On the consumer side, for instance, the Saskatchewan Farmers Union recommends recognition of the "fee-for-service" principle where practical.⁴ On the other hand, among the professions, advocating fee-for-service there are those who are willing to accept salaried positions,⁵ those in practices where a fixed salary is guaranteed as inducement payment,⁶ and those in some group practices.⁷

Other countries have experimented with different systems such as capitation and reimbursement. Capitation is a form of flat-rate payment whereby individuals or families register with the physician of choice who is paid an agreed-upon sum per annum from the fund of every person who has selected him. These potential patients are his "list"; some of them he may rarely, if ever, see, and others he will attend frequently.⁸ Reimbursement is a form of fee-for-service payment system used in such countries as Sweden, Australia, and France, in which the patient pays the physician in the first instance and recovers some predetermined percentage of the fee from the insurance agency. The fee charged by the physician may or may not have to conform to an agreed-upon schedule. This method resembles the indemnity system used in commercial insurance.

Each method has its advantages and disadvantages in a particular setting. Two very substantial studies of this subject have recently been under-

¹ The Canadian Medical Association, *op. cit.*, p. 80.

² Ease and lower cost of administration is often cited, though not as the chief argument, in favour of salary payment under a medical care plan. Looking at it purely from the administrative viewpoint, however, it should be remembered that a system of records-for-service would have to be kept in order to obtain the data necessary to evaluate health conditions and patterns of service.

³ Canadian Labour Congress, brief submitted to the Royal Commission on Health Services, Toronto, 1962, pp. 6 and 18.

⁴ Saskatchewan Farmers Union, brief submitted to the Royal Commission on Health Services, Regina, 1962, p. 4.

⁵ Public health, administration, research, teaching, industrial health, the Armed Forces.

⁶ Physicians employed in certain outlying communities in Newfoundland.

⁷ Boan, J. A., *Group Practice in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

⁸ This method has become accepted in Britain, for instance, to such an extent that the British Medical Association did not even raise the question of the method of paying the family physician before the Royal Commission on Doctors' and Dentists' Remuneration which reported in 1960 (see Abel-Smith, B., "Paying the Family Doctor", *Medical Care*, Jan.-March 1963, Vol. 1, No. 1, p. 31). In Canada, however, this system has little support nor would it be applicable here without major modification because of the entirely different relationship between general practitioner and specialist. The so-called sessional indemnity is in fact a type of part-time salary for short-term (e.g., day or half-day) sessions a physician may devote to the work for certain agencies.

taken. We note that neither author is prepared to recommend changes in the existing system either as a result of their studies in the United States¹ or Britain.²

A similar approach has been taken by the Advisory Planning Committee on Medical Care to the Government of Saskatchewan, which concluded: "that this is a very involved and difficult subject" and therefore feels that it is appropriate at this time to confine itself to a recommendation of a general nature. The Committee recommended that the fee-for-service method should be the basis of remuneration for the Saskatchewan Medical Service Insurance Plan and that other methods of remuneration be given continuing study.³

Having given careful consideration to the various methods advocated for remunerating the physician we have concluded that the fee-for-service principle is the basic one which should be used in Canada, while at the same time recognizing that other methods are applicable in many situations.

However, having accepted the views of the medical professions in the basic method of payment we cannot agree with the view presented to us that there must be an intermediary paying agency between the administrative agency and the professional practitioners. So long as negotiations are conducted on behalf of practitioners by their professional associations, and medical matters are under the control of professional committees, we are confident that the independence of professions, the professional freedom of their members, and the physician- or dentist-patient relationship will be adequately safeguarded. This will be reinforced if the administering agency is, as we recommend, an independent non-political commission representing the professions on the one hand and "consumers" on the other, or if it is an agency such as Manitoba Medical Services which the Government of Manitoba suggested might be used as the official carrier augmented, by additional representation of the public, the health professions, and the Government.⁴

It follows that the use of an intermediary between the physician and the agency administering the programme is an unnecessary addition to administrative costs paid by consumers.⁵

¹ Glasser, W. A., *The Compensation of Physicians*, New York: Bureau of Applied Social Research, (unpublished report, 1963).

² Hogarth, J., *The Payment of the General Practitioner*, New York: MacMillan, 1963.

³ Advisory Planning Committee on Medical Care to the Government of Saskatchewan, *Interim Report 1961, Final Report 1962*, Regina: Queen's Printer, 1962 pp. 72-73.

⁴ The Government of Manitoba, brief submitted by the Honourable Duff Roblin on behalf of the Government of Manitoba to the Royal Commission on Health Services, Winnipeg, January 1962. See Recommendation (1)7.

⁵ On the basis of \$5.00 per contract per year for such an intermediary (as is now done in Saskatchewan) this would involve an expenditure of about \$30 million a year for all Canada.

Organization of Practice and the Supply of Physicians

In Chapter 7 we discussed the various forms of medical practice. The manner in which practice is organized bears a direct relationship to the ability of the physician to meet the demands for his services. There are indications that physicians in group practice may be able to care for more people than their colleagues in solo practice. Physicians in group practice can employ technicians to relieve them of some technical, non-professional duties and an office staff to take care of paperwork leaving them time to concentrate on the practice of medicine.¹

There are three factors involved in the provision of what we refer to as medical services. They are: (1) the physicians, (2) technical and office personnel, and (3) capital equipment. The division of labour among these factors is evidently a matter of judgment but to a large extent it will depend on the size of the producing unit (solo practice or group). There is, no doubt, an optimum or minimum size of a clinic group where the use of certain types of auxiliary personnel or capital equipment becomes economically feasible. But there are always additional types of these resources which can be added. Moreover the size of the economically efficient group clinic will be determined largely also by the population it serves.

Gains in productivity are available in group practice owing to specialization and division of labour. However, it is not only personnel that can be substituted for physicians in the provision of medical services: to some extent increased use of capital may raise the productivity of the physician. Where capital is complementary to non-medical personnel—for example, a posting machine in the business office, dictaphones for writing medical histories, or equipment for sterilizing instruments which the nurse or nurse's aide will use—there will be substitution of capital for medical time. In other cases, capital will be complementary to the physician since he alone will use it. Where this applies one of two results might be expected; either the physician's time is saved, or he will be enabled to perform services in the office rather than in the hospital. However, even in the latter case, his time might be saved if he is able to avoid trips to the hospital.

Group practice and medical clinics have been predominantly an urban arrangement, but in recent years a number of rural groups have been established. Spokesmen for the Ontario Association of Medical Clinics claim this type of practice would raise the quality of care in rural communities.² The desire to practise medicine with the utmost help from the type of equipment and staff available puts a premium on a hospital-based practice or, if

¹ Boan, J. A., *op. cit.*

² Transcript, *op. cit.*, June 1, 1962, Vol. 65, p. 12296.

that is not possible, some sort of clinic or group possessing equipment which a solo practitioner would have difficulty in acquiring. In addition to the greater ease of establishing a group large enough to make the acquisition of equipment practical in an urban setting, the desire to be in a large centre for professional reasons pulls many physicians to the city.

But a rural group also may have something to offer. Better office facilities than could be afforded on a solo basis is one advantage. To this must be added the increased likelihood of bringing specialists to the country. In a group a specialist would find immediate employment, since the members of the group would refer to him instead of sending patients to the nearest urban centre. The professional stimulation and satisfaction of having one or more specialists to consult would bring some of the advantages of the city practice to the country.

For the patient the general level of care ought to be improved since referrals would be easier, and the general tone of the practice would tend to improve due to the influence of the more highly trained members.¹ For the physician one advantage, besides many of those mentioned above, is relief from isolation.

Dr. Clute found that isolation of the general practitioner—whether located in an urban centre or not—may have serious consequences.

“The man who is isolated, lacking stimulation from his colleagues, must depend upon his own enthusiasm and conscience to move him to keep up to date. Furthermore, being isolated, he does not have the opportunity of comparing his own work with that of other physicians, so that, in effect, the only standard that he has before him is that gained from reading, if he does read, or from what he remembers of the teaching centres during his years of training.”²

One of the doctors in the sample of general practitioners studied by Dr. Clute wondered “how he could take the time to investigate his patients’ complaints adequately and to do the reading that was necessary if he was to keep up and yet make an adequate living At the time of our visit, he persisted in maintaining the quality of his practice and keeping up his reading, but his annual income was grossly inadequate—his hourly remuneration was considerably less than that demanded of us recently by a twelve-year-old boy for lawn-cutting—and he had little or no time for his family”.³

¹ For an account of how a group improved the quality of medical practice in a rural area in the United States see Good, W. H., “Birth and Adolescence of a Rural Group”, *Bulletin of the American Association of Medical Clinics*, Vol. 6, No. 5, September 1957, pp. 120-123.

² Clute, Kenneth F., *The General Practitioner*, Toronto: University of Toronto Press, 1963, p. 461.

³ *Ibid.*, p. 468.

So long as circumstances such as these depicted above obtain, rural medicine is unattractive and the quality of care may suffer. However, technological developments today are such that great improvements in the condition of rural-based physicians could be made without great expense. For one thing, the role that modern communications can play requires exploration. By communications is meant much more than all-weather roads, telephones, air travel, electronic devices of all kinds; the term includes also the human element inherent in the creation of channels of communication between individuals.

Where all-weather roads exist, the area that can be served by a centralized complex of medical care has been greatly expanded. It is often forgotten that if a rural patient is one hour from a medical centre he is as close (in terms of travelling time) as many urban patients. But this means that through improved organization of health services facilities, some quite substantial services could be provided in strategically located centres. This concept is illustrated in the private development in upstate New York of the Rip Van Winkle Clinic. This clinic has been experimenting with the creation of satellite, or area clinics which are integrated with the central group practice. According to the medical director of the Rip Van Winkle Clinic, this pattern of organization is growing rapidly, and it is a mechanism which will do much to help solve the problem of a better distribution of high quality care.¹

The practice of establishing specialists in area clinics in small communities, located only 20 to 30 miles from the central complex has been criticized as being a wasteful use of specialist services. It would be a waste if the size of the satellite community were so small that it could not make full use of the specialist. For example, at the average rate of remuneration for specialists believed to exist in Canada, it would have to cost about \$60 a day to get the patients into the medical complex before it would be worthwhile taking the specialist to the small community. Since the cost of the road has already been paid by the community, and since most people have cars, the out-of-pocket costs and the loss of time from work would be the only additional cost involved in taking the patient to the physician. It would seem that a substantial number could be moved before the cost of bringing the specialist to the community would be exceeded.

Another example of the manner in which specialist medical care can be made available to rural areas is evident in the co-operative group medical practice of the Hamiota Medical Group. This group of four physicians, one of whom is a surgeon, serves an area with a population of

¹ Esselstyn, C. B., "The Next Ten Years in Medicine", *New England Journal of Medicine*, Vol. 266, January 18, 1962, pp. 124-129.

about 11,000. They comprise the staff of the hospital in Hamiota but each practitioner lives in a different town or village where his office is located.¹

Where long distances are involved, an adaptation of the obstetrical team device operative in Nova Scotia could be used. In this instance, a roster of specialists is available on an emergency basis for any part of the province to deal with an obstetrical complication which requires special assistance that is not available locally.² An imaginative programme of this nature, by bringing highly qualified practitioners to out-lying communities on an emergency basis, would greatly increase the number of people having ready access to specialist services and reduce the fears of many residents of rural areas that specialist services will not be obtainable when they are really needed.

Today, with helicopters, hydroplanes, small passenger planes and motor boats to complement the automobile as a means of transportation, there would seem to be substantial opportunity to organize facilities for medical care on a regional basis. Travel by airplane could be used to knit together the regions, permitting a high degree of integration of health regions with urban areas where the highly skilled specialists and teaching facilities are to be found.

There is no question that the telephone and other means of communication could be used more extensively for a great deal of consultation of the type that occurs in the corridors of clinics.

To take full advantage of this technique, the cost of appropriate installations, perhaps involving rental of medical direct lines, and similar time-saving devices needs to be explored with respect to rural medical care. Two-way radio and closed-circuit T.V. may eventually make possible a new era in the technique of consultation for diagnosis, therapy and rehabilitation in more remote rural areas.

One of the main advantages of developing and making increasing use of communication devices would be to link the various communities and by so doing bring health services to outlying areas which hitherto have been the prerogative of the larger urban centres.

Whether group practice is the vehicle to bring about the kind of changes envisaged above depends on how flexible this organizational device turns out to be. It is self-evident that if group practice were to take up the challenge, a good many physicians would have to broaden their concept of the geographic boundaries of the typical clinic and the methods of its operations.

¹ Thorlakson, P. H. T., *Provision of Medical Services Through Group Practice*, brief submitted to the Royal Commission on Health Services, Montreal, 1962.

² Transcript, *op. cit.*, October 30, 1961, Vol. 3, p. 420. Also Clute, *op. cit.*, p. 507.

The problems associated with bringing physician and patient together in rural areas are greatly accentuated in our isolated and northern regions. We have referred in Chapter 8 to the logistic problems involved in bringing patient and health personnel together in these remote areas. These difficulties can be overcome through the use of transportation and communication methods similar to those we have suggested above for rural areas. Air ambulance, by plane or helicopter, such as the Saskatchewan air ambulance service referred to in Chapter 8, could be extended to carry patients to physicians or vice versa. Two-way radio communication centres could be installed in selected hospitals in settled areas to relay medical advice to those needing it in isolated and northern regions. This would require that all these nursing stations manned by a public health nurse, to which we referred in Chapter 8, be equipped with battery generated two-way radio transmitters which are easy to operate and guaranteed to function at least eighteen months without change of battery such as those now in operation in the Australian "outback." The medicine chests which are now located in isolated settlements should contain medical supplies properly labelled which can be used with safety by laymen. The use of these methods would provide the inhabitants of our isolated and northern regions with "the best possible health care" in their circumstances.

Quality of Medical Care

The foregoing discussion has been essentially quantitative in that we have dealt with estimates of the number of physicians required in future decades, the monetary incentives for entering the profession, and the increased productivity of the physician which we believe will result with an expansion of group practice. Of equal, if not more importance in such a discussion is the quality of medical services provided by an expanded supply of physicians. This is related on the one hand to technical advances in medicine and their application to patient care, and on the other to the responsibility of the physician to keep abreast of these developments and apply them where necessary. The constant emphasis on the former tends to give the impression that it is the most important aspect of medical care, but unless the physician can assimilate these technical advances without losing sight of the basic principles he has learned in medical school and apply both in practice, their benefits will be lost to the patient. It is obvious that "even if the student could accomplish the impossible and assimilate the total fund of available knowledge in the four years at medical school he would be rapidly out of date unless he continued to study and keep abreast of new developments".¹ How can we ensure that the busy physician is made

¹ MacFarlane, J. A., *et al.*, *op. cit.*, Chapter 9.

aware of the rapid developments in medical knowledge and that his knowledge of basic principles is maintained so that a high standard of medical care is assured?

Attempts to assess the quality of medical care are fraught with methodological difficulties, but two significant developments have occurred in this area in recent years. The Canadian Medical Association, the Canadian Hospital Association, and the Royal College of Physicians and Surgeons of Canada have co-operated in the establishment of the Canadian Council of Hospital Accreditation. Before issuing a Certificate of Accreditation the Council studies the quality of care in the hospital. In order that hospitals may qualify for accreditation the medical staffs attempt to evaluate the quality of medical care which they provide. To this end they may appoint a number of committees, such as the following:¹

Tissue Committee—which studies the tissues removed by surgeons and quickly exposes the surgeon who frequently removed normal tissues.

Medical Audit Committee—which reviews medical records, pre- and post-operative diagnoses and other measures, and provides a standard method of evaluation of the medical care provided by physicians.

Medical Records Committee—which studies the quality of the physician's records of his patient and establishes an acceptable standard.

The Professional Activities Survey—a recent approach to an evaluation of certain aspects of medical records, leading to a more sophisticated appraisal of the quality of care provided in hospital.

Admission and Discharge Committee—which undertakes the responsibility for an admission policy that must indicate admission priorities for emergency, elective and chronic cases, and may include the periodic review of length of hospital stay.

All of these devices have helped to evaluate the care of the patient in hospital and have resulted in an improved standard of medical care, but the quality of care provided by the physician in the home or the office is much more difficult to assess. However, in the analysis of their operations some prepaid medical care plans bring to light unusual practices on the part of participating physicians. A significant step forward in attempts to assess the quality of medical care provided by the general practitioner was undertaken by Dr. K. Clute.² In this study which covered a sample of general practitioners in Ontario and in Nova Scotia, he found that:

"... both in Ontario and in Nova Scotia, much excellent work is being done by general practitioners. Indeed, in some practices, as the very

¹ *Ibid.*, Chapter 15.

² Clute, K. F., *op. cit.*

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high scores achieved by some of the physicians indicate, we should be hard pressed to suggest any improvements. However, the figures and the clinical examples that we have given make clear that an appreciable percentage of the practices visited in each of the two provinces were seriously deficient in quality. We must emphasize that the deficiencies to which we refer were *not* lack of knowledge of the details of recently discovered drugs or lack of familiarity with the abstruse complexities of rare diseases. The deficiencies were in the fundamentals of clinical medicine—failure to take an adequate history, i.e. failure to gather, and to make use of, the information that the patient himself could provide about his disorder; failure to perform an adequate physical examination, and, in some cases, inability to distinguish between normal and abnormal physical findings; failure, in the investigation and the treatment of cases, to think in terms of basic principles of biochemistry, physiology, pathology, microbiology, and pharmacology. The former group of physicians, those whom we found doing satisfactory work, may well be the pride of the medical profession; the latter group, the deficient group, is perhaps the more important, inasmuch as it is the challenge to the profession.”¹

We have indicated in Chapter 7 that the maintenance of high standards of medical care is the responsibility of the medical schools, the professional associations, the licensing bodies, and above all, the individual practitioner. We have referred to attempts being made to maintain high standards of medical care through programmes of continuing medical education organized by the universities and the profession. In view of Clute's findings it is evident that the present programmes are not reaching a sufficient number of practising physicians. It is possible also, that the present programmes of continuing medical education require critical appraisal.

Some deficiencies are a reflection of the methods of selecting human material from which the selection committee of medical schools must choose future physicians. The problem facing the committees is that they must choose students without the techniques necessary to assure the best possible choice. Furthermore, the didactic methods of undergraduate medical education and the shortage of clinical teachers does not provide the stimulus for the student to undertake the responsibility for his own learning which would motivate him to continue the serious study of his chosen field after graduation.

A significant factor in maintaining high standards of medical care is the scrutiny and discussion of the individual medical practitioner's day-to-day work by his professional colleagues. This requires a close day-to-day relationship, but for the busy solo practitioner this is difficult if not impossible to achieve except during the time he treats his patients in hospital. In the home or office the practitioner is on his own. Group practice, on the other hand, provides the member physicians with the close association with colleagues which gives them the incentive for a high standard of medical care. The

¹ *Ibid.*, p. 315.

patient is provided with the pooled scientific knowledge and varied skills of the members of the group. This point is made in one of our studies:

"... a larger group usually comprises the younger, recently trained physicians, and the senior, more experienced doctors, making collective experience and up-to-date training available to the patients; special diagnostic and therapeutic skills, facilities and methods are immediately provided when required; physicians are stimulated to follow modern medical achievements being subjected to the informal appraisal of their colleagues. Team-work is required because of the complexities of modern medicine. Fees charged to patients tend to be in line with fees charged by other physicians in the same community, but since group practice appears to be more efficient in the utilization of resources, personnel and material, the patients very likely benefit from a higher quality of service. . . . In addition, patients save time and perhaps money, if they have to consult a few specialists. Group practice yields itself to various forms of prepayment plans and it may be located in smaller centres, thus increasing the availability of services, in particular, of specialists, to the patients in rural and small urban areas.

"Physicians in group practice gain professional, educational, economic and practical benefits. A group can more easily afford to employ auxiliary personnel such as nurses, secretaries, managers, technicians and others, who relieve physicians of routine, time-consuming and "unproductive" work. Thus they can spend more time on their professional functions. They improve professionally by contact with each other and by sharing experience. They limit their work to those medical procedures for which they are most qualified.

"Group physicians having regular working hours can enjoy more time for leisure, undertake post-graduate studies, conduct research, attend conferences and plan vacations, without any loss of income. A group physician is under less economic pressure to take more patients than he can handle satisfactorily since, in most cases, his income does not depend directly on the number of patients he attends."¹

In concluding this analysis of the future supply of physicians we must emphasize certain vital issues. If we are to maintain our present population-physician ratio until 1991 we must increase our output of physicians. Table 13-9 summarizes our requirements.²

To meet these requirements, in addition to expanding present facilities we must build four new medical schools before 1971, excluding the medical school at "l'université de Sherbrooke" the planning for which is already substantially advanced.³ The four new medical schools will require a minimum of 780 faculty members of which 282 must be in the basic sciences and 488 in the clinical division. This means that Canadian universities must produce an average of 40 additional basic science teachers and 70 full-time clinical teachers each year for seven years.

¹ Judek, S., *op. cit.*, Chapter 6.

² MacFarlane, J. A., *et al.*, *op. cit.*, Chapter 11, Table 11-13.

³ The location of the new medical schools is specified in Chapter 2.

TABLE 13-9 SUPPLY OF PHYSICIANS IN CANADA TO MAINTAIN PRESENT POPULATION-PHYSICIAN RATIO OF 857, 1966-1991

Year	(1) Number of Physicians Required	(2) Output of Present Facilities	(3) Output of New or Expanded Facilities	(4) Total (2)+(3)	(5) Balance (4)-(1)	(6) Population- Physician Ratio
1966	23,683	23,708	—	23,708	25	856.1
1971	26,358	26,486	148	26,634	276	848.1
1976	29,443	28,730	1,153	29,883	440	844.4
1981	32,959	30,702	2,829	33,531	572	842.4
1986	36,809	32,191	4,862	37,053	244	851.4
1991	40,964	33,417	7,226	40,643	-321	863.7

SOURCE: Table 13-3.

In the provision of medical care in the future we stress the importance of seeking more effective ways of organizing medical care such as group practice, especially in rural areas, the provision of adequate communication and transportation facilities to bring patient and physician together in rural and remote northern regions, and the maintenance of the quality of medical care through careful professional control of standards.

FUTURE SUPPLY OF DENTISTS

How Many New Dentists?

We have noted elsewhere¹ that dental disease is probably one of the most frequent health defects found in the Canadian population. According to the Canadian Dental Association, by 13 years of age 98 per cent of our children have one or more decayed teeth and on the average they have a backlog of three teeth needing restoration.² This unsatisfactory state of dental health is to an extent related to a deteriorating population-dentist ratio³ which will continue unless steps are taken to reverse this trend.⁴

The present population-dentist ratio, which indicates that 3,108 Canadians are dependent on one dentist, is inadequate to meet present needs. Moreover, our educational facilities are so limited we cannot main-

¹ Chapter 5.

² Canadian Dental Association, brief submitted to the Royal Commission on Health Services, Ottawa, March 1962, p. 11.

³ Chapter 7.

⁴ See Table 13-10.

tain even this ratio in the future because of our rapid population growth. Accordingly, in order to maintain the present ratio we will require a substantial expansion of dental schools, and if we are to improve the Canadian ratio we will require a more substantial and rapid expansion of dental education facilities.

The estimated number of dentists which will be produced by our present dental education facilities is indicated in Table 13-10. Table 13-11 indicates the number of dentists that would be produced if facilities for dental education are expanded. In view of the extent of the shortage of dentists we recommend that Projection 3, which is based on a gradual though rapid growth in dental school facilities, be adopted. Even with this expansion, Canada's future population-dentist ratio would be below the current United States ratio of 1,900 and the Swedish ratio of 1,500. The

TABLE 13-10 ESTIMATED SUPPLY OF DENTISTS AND CONSEQUENT POPULATION-DENTIST RATIO, CANADA, QUINQUENNIALY, 1961-1991

Year	Estimated Number of Dentists Assuming Present Trends in Output*	Population- Dentist Ratio**
1961.....	5,868	3,108
1966.....	6,336	3,203
1971.....	6,988	3,233
1976.....	7,810	3,231
1981.....	8,537	3,309
1986.....	9,179	3,437
1991.....	9,746	3,602

*The assumptions are:

- No increase in facilities except the school at University of British Columbia which will graduate 40 dentists in 1969.
- Gradual increase in utilization of present facilities until a total of 304 are graduating in 1967.
- Attrition at the rate of 3 per cent per year until after 1971, after which it drops to 2.45 per year.
- No specific allowance has been made for immigration which has been slight in the past, nor for the foreign students who are trained in Canadian dental schools. The estimates in this column are likely to be too generous.
- The figures are at year's end. Hence, if comparing with C.D.A.'s figures, the figure for 1961 above will be the same as their figure for 1962.

**Population estimates based on a net immigration of 50,000 per year.

SOURCE: McFarlane, Bruce A., *Dental Manpower in Canada*; Paynter, K. J., *Dental Education in Canada*; studies prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964; *Canadian Dental Association*, brief submitted to the Royal Commission on Health Services, Ottawa, March 1962; *The Canadian Dental Association Journal*, Vol. 29, No. 5 (May, 1963); and calculations.

TABLE 13-11 NUMBER OF DENTISTS AND POPULATION-DENTIST RATIO ON THREE ASSUMED TRENDS, CANADA, QUINQUENNIALLY, 1961-1991

Year†	Projection (1) Estimated Number of Dentists Assuming no New Capacity is Added Other than the School at U. B. C.		Projection (2) Estimated Number of Dentists Required to Maintain Present Population-Dentist Ratio of 3,108*		Projection (3) Estimated Number of Dentists Required to Improve the Population- Dentist Ratio by 1991 to 2,450**	
	Number of Dentists	Population per Dentist*	Number of Dentists	Population per Dentist*	Number of Dentists	Population per Dentist††
1961	5,868	3,108	5,868	3,108	5,868	3,108
1966	6,336	3,203	6,530	3,108	6,386	3,179
1971	6,988	3,233	7,270	3,107	7,158	3,156
1976	7,810	3,231	8,120	3,108	8,771	2,877
1981	8,537	3,309	9,090	3,107	10,575	2,671
1986	9,179	3,437	10,150	3,108	12,493	2,525
1991	9,746	3,602	11,295	3,108	14,329	2,450

*McFarlane, Bruce A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2, Table 2-3. It will be noticed that he gives the ratio of 3,108 for 1962 rather than for 1961. This depends on whether one uses first-of-year or end-of-year figures for dentists to divide into the June estimates of population. McFarlane uses first-of-year figures. We use end-of-year figures, and hence claim the ratio of 3,108 for 1961.

**The ratio of 2,450 is remarkably similar to the current ratio for British Columbia (2,406), which is the lowest in Canada. Also, the growth assumed resembles that suggested by Dr. K. J. Paynter, but is nearly twice as rapid as he suggested. See Paynter, K. J., *Dental Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964. The growth is outlined in Table 13-11.

†Population projection assumes net immigration of 50,000 annually.

††End-of-year figures in each case.

SOURCE: McFarlane, Bruce A., *Dental Manpower in Canada*; Paynter, K. J., *Dental Education in Canada*; studies prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964; *Canadian Dental Association*, brief submitted to the Royal Commission on Health Services, Ottawa, March 1962; *The Canadian Dental Association Journal*, Vol. 29, No. 5, (May 1963); and calculations.

growth of supply shown in Projection 3 depends on two factors; the expansion of facilities and an expanded graduate programme in dental schools to train the necessary teaching staff. Table 13-12 shows the methods of increasing the supply of dentists that is required in order to arrive at Projection 3. Net immigration is here assumed to be negligible and therefore the supply of dentists is drawn solely from the expansion of present educational facilities and from those new dental schools which we recommend. Maximum student intake of the present six dental schools is indicated to be 338.¹ Even with the expansion of these facilities, plus the graduates from

¹ Paynter, K. J., *Dental Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 5.

the University of British Columbia, which should provide 40 dentists by 1969, the supply of dentists will be far from adequate. Thus 2 of 4 new dental schools must commence adding to the dental supply by 1975.

In Projection 3 in Table 13-12, we have made allowance for a loss of 10 per cent for non-residents returning to their own countries, and a further 10 per cent student attrition rate.¹ The attrition rate for the dentist population as a whole is believed to be 2.45 per cent.²

TABLE 13-12 METHOD OF INCREASING SUPPLY OF DENTISTS IN CANADA, PROJECTION 3, QUINQUENNIALLY, 1966-1991

Item	Number of Dentists in Canada at Five-Year Intervals					
	1966	1971	1976	1981	1986	1991
Projection 3.....	6,386	7,158	8,771	10,575	12,493	14,329
Population-Dentist Ratio.....	3,179	3,156	2,877	2,671	2,525	2,450
<i>Supply</i>						
1. Present facilities (includes student intake of 320 up to 1966 and capacity intake of 338 after this date).....	6,386	6,915	7,380	7,790	8,154	8,476
2. New steps and/or facilities						
(a) Expansion—with the following number of Canadian graduates; 1969-UBC graduating 36, 1970-Dalhousie and University of Montreal graduating 68, 1972-McGill, Alberta, Manitoba, graduating 66.....	—	242	1,089	1,934	2,815	3,750
(b) New Dental Schools						
No. 1—Yielding 36 Canadian graduates in 1975; 54 in 1980..	—	—	70	281	544	808
No. 2—Yielding 27 Canadian graduates in 1975; 45 in 1980.	—	—	53	219	439	658
No. 3—Yielding 36 Canadian graduates in 1980; 54 in 1985.	—	—	—	70	183	544
No. 4—Yielding 27 Canadian graduates in 1985.....	—	—	—	—	53	184
TOTAL.....	6,386	7,157	8,592	10,294	12,188	14,420

SOURCE: See Table 13-10.

If present facilities are expanded and 4 new dental schools are built so that all are graduating students by 1985,³ the population-dentist ratio

¹ There may not in fact be a loss of 10 per cent between the first and fourth years, because of the practice of the dental schools in admitting immigrant dentists into second year. See Paynter, K. J., *ibid.*, Chapter 5.

² McFarlane, Bruce A., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2.

³ Chapter 2, Recommendations 155 and 156.

will improve steadily. But, even with these additional educational facilities, the supply of dentists will fall short of our Projection 3 during the decade 1976-86.

Immigration is a possible source of supply of dentists. However, this source has been discounted because the present annual inflow of immigrant dentists amounts to a meagre addition to our stock of dentists. Unlike physicians who have entered Canada in increasing numbers in recent years, dentists from other countries appear reluctant to immigrate to Canada. This may be due to a number of factors, among them the high standard of living they enjoy in their native country, but most important, perhaps, the restrictive effect of the various provincial licensing regulations. The migrating dentist in most cases must attend a Canadian dental school for at least two years in order to obtain a licence to practise.

"This regulation is even extended, with some few exceptions, to graduate dentists from the United Kingdom and other Commonwealth countries. Dentists from foreign countries with the exception of the United States are usually entered in the second year of the four-year dental course at the dental schools. Those dentists from the United States who migrate to Canada and are graduates of dental schools approved by the C.D.A. are accepted for examination by the provincial licensing boards."¹

If the licensing regulations could be made less restrictive without adversely affecting quality, there is a strong possibility that an increased immigrant inflow of dentists would result. This being so, the increases required by Projection 3 could be attained sooner than indicated. Nevertheless, there remains the possibility that even with an easing of the licensing regulations the additional immigrant dentists may not materialize to the extent assumed.²

As noted in Table 13-13, of the 5,996 dentists practising in Canada in 1963, only 45 were immigrant dentists (excluding those from the United States). Of these 12 had come to Canada before the outbreak of World War II, and 33 since 1945. In other words, in the whole post World War II period, dentists from abroad have contributed less than one per cent of our total supply of dentists and only after they had obtained the qualifications stipulated by the licensing bodies. For this reason we consider Projection 3 in Table 13-11 the most realistic of the three projections. However, a review of the situation should be made after a few years in order to determine the adequacy of supply, and to ensure a continued improvement in the population-dentist ratio, for even the projected 1991 population-dentist ratio falls short of the present British Columbia ratio, and even more so than that found, for example, in the United States.

¹ McFarlane, Bruce A., *ibid.*, Chapter 2.

² Chapter 2, Recommendation 166.

TABLE 13-13 DENTISTS LISTED IN C.D.A. DIRECTORY, 1963, WITH QUALIFICATIONS OBTAINED FROM DENTAL SCHOOLS, NOT ON THE APPROVED LIST OF SCHOOLS IN CANADA AND THE UNITED STATES

Province	Qualifications were Obtained										Total No. of Dentists in Province (1963)	
	United Kingdom & Eire		Australia & New Zealand		Europe		Other		Total			
	Pre- war	Post- war	Pre- war	Post- war	Pre- war	Post- war	Pre- war	Post- war	Pre- war	Post- war		
Newfoundland.....	—	4	—	—	—	—	—	—	—	—	5	41
Prince Edward Island.....	—	—	—	—	—	—	—	—	—	—	—	31
Nova Scotia.....	1*	—	—	—	—	—	—	—	—	1	—	191
New Brunswick.....	—	—	—	—	—	—	—	—	—	—	—	133
Quebec.....	—	—	—	—	—	2	—	—	—	2	—	1,404
Ontario.....	2	7	—	2	—	—	—	—	—	2	9	2,515
Manitoba.....	2*	3	—	—	—	—	—	—	—	2	3	321
Saskatchewan.....	1	1	—	—	1	2	—	—	—	2	4	197
Alberta.....	—	1	—	—	—	—	—	—	—	—	2	459
British Columbia.....	3	8	—	2	—	—	—	—	—	3	10	704
All Provinces.....	9*	24	—	4	3	2	—	—	—	12*	33	5,996**

*A duplicate registration is contained here—that is, one dentist is registered both in Nova Scotia and Manitoba.

**The four dentists (all trained in approved schools) presently licensed in the North West Territories and the Yukon are not contained in this figure, otherwise the total would be 6,000.

SOURCE: Data supplied by Canadian Dental Association.

Faculty Requirements

The second factor determining the future supply of dentists is the availability of the required dental school staff. Exact standards by which the adequacy of the supply can be judged are difficult to apply. However, the World Health Organization¹ suggests that the ratio of full-time staff to students should be 1:7. This compares with the 1961 Canadian ratio of 1:12.6. Secondly, it is recommended that the full-time: part-time staff ratio should be 40:60² as compared to the 1961 ratio of 18.7: 81.3.

The suggested ratio of one full-time faculty member to seven students has been applied to the projected number of students yielding the full-time staff requirements in Table 13-13 below. Similarly the ratio of 40:60 is applied to the full-time faculty to provide the estimate of the required part-time faculty.

TABLE 13-14 DENTAL FACULTY AND ESTIMATED FACULTY REQUIREMENTS, CANADA, 1961-1986

Year	Faculty			
	Full-time	Half-time*	Part-time	Total
1961.....	70	80	298	391
1966.....		178	267	445
1971.....		264	396	660
1976.....		329	493	822
1981.....		376	564	940
1986.....		406	609	1,015

* Half-time staff has been included in the count of full-time staff between 1966 and 1986 since many persons so employed hold senior positions in the dental schools. For purposes of calculation it was assumed that two half-time people are the equivalent of one full-time.

SOURCE: Based on Table 13-11.

In order to attain these faculty : student and full-time : part-time ratios : the deans of the Canadian dental schools are of the opinion that there is an existing need for 80 additional full-time academic staff;³ by 1986 about 325 additional staff will be needed, or an average of 18 a year. If the required full-time staff can be provided it is unlikely that there will be a comparable shortage of part-time staff. With the currently existing need

¹ World Health Organization: *Dental Education: Report of an Expert Committee on Dental Health*. Technical Report Series 244. Geneva: 1962, p. 20.

² Recommendation made by the deans of the United States dental schools. Commission on the Survey of Dentistry in the United States. *Survey of Dentistry*, Washington, D.C. American Council on Education, 1961, p. 309.

³ Paynter, K. J., *op. cit.*, Chapter 4 and Chapter 2, Recommendations 161, 163 and 164.

of 80 full-time staff it may prove difficult to obtain the additional 18 staff members yearly, particularly because of the type of experience required:

"While shortage of staff is not a unique problem for the universities, the dental school problem does have some unique aspects to it. The dental staff will serve the school better if they have had experience in the practice of dentistry prior to entering study to become a teacher, particularly in a clinical field, but in others as well. In dentistry such experience can be obtained only in practice. Unless one is fortunate enough to be able to make arrangements to work with another dentist without capital outlay, a large debt is usually incurred. Following this the young man who aspires to a teaching career must sell his equipment, etc., and prepare to be supported financially by a modest fellowship if his training is of a basic research nature, or to support himself if his training is in a specialty. This together with the comparative unattractiveness of university salaries makes recruitment of staff difficult, particularly in the clinical field. At the University of Montreal the problem is complicated by the fact that staff must be French-speaking, which limits recruitment entirely to University of Montreal graduates".¹

Problem of Recruitment

Our estimate of the most likely future supply of qualified dentists is based on two assumptions; a gradual though stepped up rate in the expansion of educational facilities as noted in Table 13-12, and the recruiting of substantially more dental students in the future. The latter point is of particular importance since the number of first-year dental students in recent years has been less than the actual capacity of dental schools. The capacity for first-year dental students in Canadian dental schools is indicated in Table 13-15. Apparently prospective dental students, like other university students, apply to more than one university for admission thus inflating the number of applicants. Furthermore, some who are accepted fail to register. Their number amounted to 15 per cent of qualified students accepted in 1962.² Dental schools attempt to meet this situation by sending letters of acceptance to more students than they can accommodate with their available facilities. Some of the unfilled places are occupied by students who failed the previous year, while other unfilled places in the upper years are taken by immigrant dentists some of whom must attend a Canadian dental school for two years in order to obtain a licence to practise in Canada.

Like the medical student, the dental student faces a formidable barrier to his professional training in the high cost of dental education. He faces a higher financial obstacle than students in other professional schools or in the Faculty of Arts and Science. According to Table 13-16 in the academic year

¹ Bissell, C. T., *President's Report*, University of Toronto, 1961, as quoted in *ibid*.

² *Ibid.*, Chapter 2.

TABLE 13-15 CAPACITY FOR FIRST-YEAR STUDENTS IN CANADIAN DENTAL SCHOOLS, NUMBER OF FIRST-YEAR STUDENTS AND UNFILLED PLACES, 1952-1962

Year	Capacity	Number of Students	Unfilled Places*
1952-53.....	202	172	30
1953-54.....	202	194	8
1954-55.....	202	211	+ 9
1955-56.....	202	199	3
1956-57.....	205	206	+ 1
1957-58.....	205	194	11
1958-59.....	263	250	13
1959-60.....	307	279	28
1960-61.....	327	268	59
1961-62.....	338	320	18
1962-63.....	338	332	6

*In two instances (1954-55 and 1956-57) there was an "overflow".

SOURCE: McFarlane, B., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 2, Table 2-12.

TABLE 13-16 DENTISTRY AND OTHER STUDENTS' AVERAGE EXPENDITURE FOR REGIONS AND CANADA, 1961-1962

Faculty and Region	Average Expenditure
<i>Dentistry</i>	
East.....	3,111*
Quebec.....	2,540
Ontario.....	2,249
West.....	2,676
Canada.....	2,465
Arts and Science.....	1,352
Education.....	1,415
Engineering.....	1,553
Law.....	2,050
Medicine.....	2,246
Pharmacy.....	1,550

*The size of this average is due to the small sample of 47 students 26 of whom were married.

SOURCE: Dominion Bureau of Statistics, *University Student Expenditure and Income in Canada, 1961-62*, Part II—Canadian Undergraduate Students, Ottawa: Queen's Printer, 1963, Table 35.

1961-62 the average expenditure for dental students in Canada was \$2,465, or \$219 more than a similar expenditure for medical students who were the next highest.

While these expenditures remain high they tend to restrict the entry into the dental profession of a number of recruits from low income families. A high proportion of all professions is recruited from higher income families. Table 13-17 shows that 20.5 per cent of the parents of dental students in 1961 had an approximate annual income of \$10,000 or more compared with 7.8 per cent of all non-farm families.

TABLE 13-17 APPROXIMATE ANNUAL INCOME OF CANADIAN DENTAL STUDENTS' PARENTS, 1960-61

Income	Per Cent	
	Non-Farm Families	Parents
\$	1960	1961
Under 4,000.....	38.5	22.7
4,000 -5,999.....	30.2	27.8
6,000 -7,999.....	16.3	16.9
8,000 -9,999.....	7.2	12.1
10,000-14,999.....	5.3	11.8
15,000+.....	2.5	8.7

SOURCE: McFarlane, B., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964; Chapter 5, Table 5-5; Dominion Bureau of Statistics, *Summary Family Income Statistics, 1961*, Ottawa: Queen's Printer, 1963.

In briefs submitted to the Commission a number of recommendations dealt with means to enable dental students to meet the cost of dental education. There is general agreement that dental students need financial aid but there is a difference of opinion on the methods of providing assistance. The Canadian Dental Association calls for a reduction of fees and the establishment of a loan fund.¹ The Newfoundland Dental Society recommends a scholarship fund and a loan fund,² while the Department of Health of the Province of New Brunswick proposes a subsidy for dental students similar to the Regular Officers' Training Plan of the Department of National Defence on condition that they serve the province after graduation for a

¹ *Canadian Dental Association*, brief submitted to the Royal Commission on Health Services, March 1962, Ottawa, pp. 53-54.

² *Newfoundland Dental Society*, brief submitted to the Royal Commission on Health Services, St. John's, November 2, 1961, p. 6.

given period.¹ The idea that students receiving assistance be obligated to practise in a specified region after graduation is also contained in the brief of the New Brunswick Dental Society which suggests that scholarships and grants be given to dental students on condition that they serve the province after graduation for a specified period of time.² The College of Dental Surgeons of Saskatchewan calls for bursaries for pre-dental students with satisfactory standing sufficient to pay for the complete dental course,³ while the Alberta Dental Association recommends a review of the existing programme of scholarships, awards, grants and low interest loans to high school and undergraduate dental students.⁴ The Faculty of Dentistry at the University of Manitoba proposes a plan of scholarships and bursaries to cover student costs of dental education.⁵

There is little doubt that our recommendations designed to help financially those young people desirous of entering health professions,⁶ would increase the flow of students from low income families, including those wishing to take up dentistry. But it would be overlooking the obvious to assume that lack of income is the only barrier: "... financial ability needed to undertake the lengthy education leading to professional status in dentistry is not equally distributed throughout the population (neither, of course, is the familial support and tradition, the personal ambition and motivation)".⁷

An additional and important incentive to potential dental students is the level of income they can expect as a qualified dentist. The available evidence indicates that a substantial proportion of practising dentists consider the profession suffers from "inadequate income".

"In the recruitment study conducted by the C.D.A. conflicting reports regarding the adequacy of the dentists' incomes were received from the respondents and one-third (34.3 per cent) of those who would encourage 'suitable young people to consider dentistry as a career' would do so on the basis that there is a 'good income' in dentistry. On the other hand, 41.5 per cent of those who would not encourage the young to enter dentistry would not do so because of the 'inadequate income'."⁸

¹ *The Department of Health, Province of New Brunswick*, brief submitted to the Royal Commission on Health Services, Fredericton, Nov. 9, 1961, Section I—p. 7.

² *The New Brunswick Dental Society*, brief submitted to the Royal Commission on Health Services, Fredericton, November 1961, p. 3, para. 15.

³ *The College of Dental Surgeons of Saskatchewan*, brief submitted to the Royal Commission on Health Services, Regina, January 1962, p. 8, paras. 34, 35 and 36.

⁴ *The Alberta Dental Association*, brief submitted to the Royal Commission on Health Services, Edmonton, February 1962, p. 19, V (c).

⁵ *Faculty of Dentistry, University of Manitoba*, brief submitted to the Royal Commission on Health Services, Winnipeg, January 1962, p. 10, para. 45.

⁶ See Chapter 2, Recommendation 158.

⁷ McFarlane, B., *op. cit.*, Chapter 5.

⁸ McFarlane, B., *op. cit.*, Chapter 5.

Nevertheless, dentists in private practice in Canada have maintained a high income level although not as high as that of physicians and some other professions. Table 13-18 shows that incomes of dentists have risen more rapidly than those of other professions in the post-war period.

TABLE 13-18 AVERAGE INCOME OF CANADIAN TAXPAYERS BY PROFESSION AND RANK OF DENTISTS' INCOME, 1948-1959

Year	Doctors and Surgeons	Independent Engineers and Architects	Lawyers and Notaries	Dentists	Accountants	Other Professionals	Dentists' Rank
	\$	\$	\$	\$	\$	\$	
1948	8,274	7,455	8,309	5,395	—*	4,171	(4)*
1949	9,009	10,428	9,533	5,748	—*	4,888	(4)*
1950	9,881	10,955	9,641	6,202	—*	4,311	(4)*
1951	9,975	9,628	10,214	6,287	8,171	4,225	5
1952	10,522	12,266	9,222	7,112	8,026	4,197	5
1953	11,258	10,289	9,955	7,485	8,096	4,580	5
1954	11,891	12,059	11,925	7,896	8,672	4,900	5
1955	12,166	14,007	12,243	8,554	9,315	5,411	5
1956	13,053	13,640	12,617	9,230	9,940	5,729	5
1957	13,978	14,581	13,244	10,234	10,879	5,711	5
1958	15,264	14,260	13,163	10,662	10,627	6,281	4
1959	15,737	14,983	14,123	11,605	11,033	6,476	4

*Accountants not separated.

SOURCE: Department of National Revenue, Taxation Division, *Taxation Statistics*, Ottawa: 1950-1961.

The earning power of dentists must be weighed against the substantial initial financial outlay required to begin practice. This expense covers items such as dental instruments, equipment, supplies and furniture. The expenditures required are outlined in Table 13-19. The survey on which the table is based also indicated that over 86 per cent of recent graduates borrowed money to finance their new practices.¹

In Canada dentistry is a predominantly male occupation. In 1962, there were only 97 women dentists registered with the Canadian Dental Association² representing 1.6 per cent of its membership. Comparable data for other countries are available for 1958; Table 13-20 shows that the percentage of women dentists varies from 80 per cent in Finland to less than

¹ *Ibid.*, Table 5-25.

² *Ibid.*, Chapter 3.

TABLE 13-19 AVERAGE COST OF ESTABLISHING A PRACTICE AND PERCENTAGE OF RECENT GRADUATES REPORTING EXPENDITURES, BY SPECIFIED ITEMS

Item	Per Cent Reporting Expenditures		Average Cost	
	Of Those Reporting Any Expenditures	Of Total Respondents	Mean	Median
			\$	\$
Instruments.....	94.0	73.1	1,298	500
Supplies.....	90.0	70.1	1,376	714
Equipment.....	89.7	69.8	6,330	6,500
Furniture.....	81.5	63.4	450	300
Business Equipment.....	82.3	64.0	377	250
Renovations.....	73.1	56.9	1,052	600
Other.....	27.3	21.3	866	350
TOTAL.....	100.0	77.8	11,749*	9,214**

*This is equivalent to an average of \$9,822.

**This is equivalent to an average of \$9,500.

SOURCE: McFarlane, B., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 5.

two percent in Canada and one per cent in the United States.¹ Of the 132 women graduates in dentistry from Canadian dental schools since 1919-20, 70.4 per cent are still practising.² The evidence supports the possibility that more women can be recruited as dental students. Some of these women dentists who marry may have to make certain adjustments so that the dual roles of housewife and professional may be performed effectively. Our study of dental practice in Canada shows that some women dentists:

- (i) located their dental office in or near their home;
- (ii) restricted their schedule of office hours as well as limited the number of hours worked per week;
- (iii) carefully planned office work and family routine; and,
- (iv) limited the type of office they open or join.³

The Commission believes that dentistry provides a promising career for women and that it is in the national interest to attract an increasing number to this profession.

¹ Of the women dentists on the Register of the Canadian Dental Association, 36 per cent were born in Latvia, Lithuania and Estonia.

² For a discussion of women in dentistry see Talbot, Nell Snow, "Women in Dentistry", *American Journal of Dental Education*, March 1961, p. 17.

³ McFarlane, B., *op. cit.*, Chapter 3.

TABLE 13-20 PERCENTAGE OF DENTISTS IN VARIOUS COUNTRIES WHO ARE WOMEN—1958

Country	Per Cent
Lithuania.....	96
Latvia.....	93
Finland.....	80
Russia.....	71
Greece.....	50
Denmark.....	40
Israel.....	29
France.....	25
Sweden.....	25
Norway.....	23
Netherlands.....	15
West Germany.....	13
Belgium.....	10
Japan.....	10
Switzerland.....	10
Luxembourg.....	8
Great Britain.....	8
Italy.....	6
Australia.....	5
Austria.....	4
Mexico.....	3
Canada.....	2
South Africa.....	1
New Zealand.....	1
United States.....	1

SOURCE: Hollingshead, Byron S., *Survey of Dentistry*, American Council on Education, Washington, D.C.: 1961, Appendix C, p. 528.

Organization of Practice and the Supply of Dentists

We have noted in Chapter 7 that there is not a marked trend to forms of combined practice in dentistry. However, dentists, like physicians, practise under various institutional auspices although the independent private practitioner remains the predominant form of practice as is evident from Table 13-21. These data show the small proportion of dentists in school and other organized dental services. Evidently there is a serious shortage of dental personnel of various types in school dental programmes despite the fact, which we have noted earlier, that 98 per cent of our children up to 13 years of age have on the average three teeth needing restoration.¹ In six provinces, Prince Edward Island, Nova Scotia, Ontario, Manitoba, Alberta and British Columbia, mobile clinics have been organized to deal with the problem of dental health for children and adults in rural and remote areas.

¹ See page 552.

TABLE 13-21 PERCENTAGE DISTRIBUTION OF DENTISTS, BY TYPE OF EMPLOYMENT IN CANADA (1962), UNITED KINGDOM (1962), AND UNITED STATES (1961)

Type of Employment	Canada, 1962 (5,868)	U.K., 1962† (15,501)	U.S.A., 1961 (106,000)
Dental Schools Staff.....	1.4*	1.6	0.9
Armed Forces.....	2.8	2.8	6.1
Other Federal Departments.....	1.0	—	
School Dental Service.....	1.7*	7.7	0.4††
Hospital Services.....	1.4*	10.9	
Public Health.....	1.2*	—	
Private Practice.....	91.9	3.2	92.4
General Dental Services.....	—	73.5/76.7	—
TOTAL.....	101.4**	99.7	99.8

*The half-time personnel have been included here as their full-time equivalent, i.e., two half-time dentists have been reckoned as one full-time dentist.

**Adds to more than 100 per cent since some of those in private practice also serve on a part-time basis in the Dental Schools, the School Dental Service, Public Health and in the Hospital Service.

†The Assistant Secretary of the British Dental Association in a personal communication to the C.D.A., stated: "A large number of those working in the Hospital Services are working part-time and are probably employed in the remainder of their time in the General Dental Services and about 900 of those in the General Dental Services also give some of their time to sessional work in the School Dental Services".

††Includes "dental positions such as state and local health departments industry and dental societies". Moen, B. Duane, *Proceedings of the Workshop on the Future Requirements of Dental Manpower and the Training and Utilization of Auxiliary Personnel*, University of Michigan, 1962, p. 18, hereafter referred to as the *Michigan Study*.

SOURCE: McFarlane, B., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 4.

Unlike the physician the dentist does not usually practise in the hospital. In 1962, only 14 Canadian hospitals possessed dental facilities which met the standards set by the Canadian Dental Association. This represents one per cent of all hospitals in Canada compared with about 33 per cent in the United States. In 1962, there were only 55 full-time and 59 part-time dentists practising in hospitals, or the full-time equivalent of 1.4 per cent of all dentists. Obviously the amount of dental service provided in Canadian hospitals is very limited and this is usually restricted to hospital in-patients. Evidently the growth of dental services in hospitals, whether for in-patients or out-patients, cannot be expected under prevailing conditions, but an expansion of these two types of service is an obvious need at a time when dental defects are so widespread and the required services to treat them so limited.¹

¹ See Chapter 2, Recommendation 40.

Specialization has important implications for the manner in which a professional practice is organized. Like the physician, the dental specialist confines himself to a specific area of dental service, and this, in turn, limits the kind of patients he treats. This latter fact means that the dental specialist must locate his practice in an urban area where there is a relatively high concentration of population so that he can be assured of a full-time practice. Only 3.8 per cent of Canadian dentists are qualified specialists although many general practitioners perform specialist functions. This situation is similar to that in medicine in which many "non-certified" specialists perform specialist functions.

There are three recognized dental specialties in Canada: orthodontics, oral surgery, and periodontics. Table 13-22 shows that orthodontics is by far the largest specialty, both here and in the United States.

TABLE 13-22 GROWTH IN SPECIALIZATIONS, CANADA (1952-1962)
AND UNITED STATES (1952-1960)

Specialization	Canada		United States	
	1962 (227)	1952 (126)	1960 (4,170)	1952 (2,584)
	%	%	%	%
Orthodontics.....	56	48	50	48
Oral Surgery.....	26	28	28	26
Periodontics.....	10.5	16	7	14
Paedodontics*.....	7.5	8	5	3
Prosthodontics.....	—	—	7	7
Oral Pathology.....	—	—	1	1
Public Health.....	—	—	1	**
TOTAL.....	100	100	99	99

*Although in past years the Canadian Dental Association listed the number of paedodontists in the annual dental personnel statistics, the Association does not recognize paedodontics as a specialty.

**Less than 0.5 per cent.

SOURCE: McFarlane, B., *Dental Manpower in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Table 3-27.

Most of the specialists practise in urban areas as shown in Table 13-23. In each of these specialties more than 75 per cent of the practitioners are located in cities of over 250,000 population. We have already shown in Table 7-12 that an urban-rural maldistribution of all dentists, specialists and non-specialists, exists in Canada. Obviously, more specialists must be

TABLE 12-23 PERCENTAGE DISTRIBUTION OF QUALIFIED DENTAL SPECIALISTS BY CITY SIZE, CANADA, 1962

City Size	Specialities		
	Oral Surgeons	Orthodontists	Periodontists
	(59)	(127)	(24)
1,000,000 and over.....	45	48	60
250,000—999,999.....	42	28	33
50,000—249,999.....	13	21	7
30,000—49,999.....	—	2	—
Less than 30,000.....	—	1	—
All cities.....	100	100	100

SOURCE: *Directory*, Canadian Dental Association, The Association, Toronto: 1962, pp. 95-98.

trained and inducements offered to attract them to medium sized centres to provide more reasonable access to such services.¹

An important aspect of organized dental practice today is the increase in volume of service which the practitioner can provide through his use of auxiliary personnel. We have described the various types of auxiliaries and the training they receive. This discussion showed that the dental hygienist undergoes a two-year training programme in a university in order to undertake a limited number of technical tasks under the direct supervision of the dentist. The Commission on the Survey of Dentistry of the United States questioned whether the dental hygienist is being given more training than is required for the tasks he performs.

"Although the Commission is sympathetic with the desire to improve the educational experience of hygienists, it appears that the two-year curriculum for hygienists may be over-educating them for the services most hygienists actually perform. The two-year programme should permit hygienists to acquire a background that would enable them to perform a number of services under the direct supervision of dentists, comparable in degree of responsibility to those entrusted to nurses. As mentioned in the preceding chapter (Dental Health) some nurses practise with a minimum of two years training. Certainly, two years of training are not needed to prepare for the cleaning and polishing of the exposed surfaces of the teeth. Dental Corps men in the armed forces are trained within a few weeks to provide this service".²

The experience of the New Zealand Dental Nurse and the experimental programme in the United Kingdom designed to evaluate the effectiveness of the dental auxiliary, suggests that we can train a similar type of

¹ See Chapter 2, Recommendation 51.

² Paynter, K. J., *op. cit.*, Chapter 8.

auxiliary in Canada who would undertake a wider range of technical tasks than the dental hygienist does now, and thus increase the volume of dental service provided.

New Dental Auxiliaries

The provision of an increased volume of dental service, especially for children, is a major problem, and its solution, in part, lies in the training of individuals who can work under the direction of a dentist. A study dealing with the training and employment of auxiliary personnel in the Royal Canadian Dental Corps indicates that individuals can be trained outside a university to perform advanced technical services.

- “(b) The clinical technician performed dental treatment equivalent to nearly four dental officer hours per 6½-hour working day, which means in effect that the dental officer-clinical technician team achieved 10½ dental officer hours in a 6½-hour day, an increase of 61.5 per cent.
- “(c) The increase in productivity during the study period when evaluated by time points per duty day was 90.7 per cent over the previous quarter and 95.8 per cent over the 14 duty days immediately prior to the study.”¹

The work carried out by these technicians is more intensive in some respects than that undertaken by the civilian dental hygienist, even though the former are not graduates of a two-year university course. In fact, the minimum educational requirement required to enlist in the Canadian Army is Grade 8, although of course many recruits will exceed this minimum. Nevertheless, the fact remains that highly skilled technicians are trained outside a university to perform dental treatment. We have outlined in Chapter 7 the training and technical skills of the New Zealand School Dental Nurse and the Dental Auxiliary in the United Kingdom neither of which are university trained. These three attempts to increase the volume of dental service through the use of skilled auxiliaries show that such personnel can be selected and trained to undertake, under direction, a number of the procedures performed by the dentists. At the Dental School of the University of Alberta the programme of the dental hygienist includes some techniques not usually included in such courses. Despite these progressive steps the problem of dental disease remains, and we believe its magnitude to be serious enough to warrant immediate action.²

¹ Baird, K. M., D.D.S., Shillington, G. B., D.D.S., B.Sc., and Protheroe, D. H., D.D.S., M.P.H., “Pilot Study on the Advanced Training and Employment of Auxiliary Dental Personnel in the Royal Canadian Dental Corps: Preliminary Report”, *The Canadian Dental Association Journal*, Vol. 28, No. 10, October 1962, p. 633.

² See Chapter 2, Recommendation 39.

There is an apparent reluctance on the part of the dental profession in the United States to explore the possibilities of enlarging the technical responsibilities of the auxiliary. The policy of the Canadian Dental Association is more advanced. According to the Association:

"Auxiliaries should be trained to render a far broader scope of duties than currently feasible, but they should perform these duties under the direct supervision of a dentist, the only person who can assume responsibility for the patient's complete dental care".¹

We are particularly concerned with the state of dental health among children.² This problem becomes more acute when we consider the present shortage of dentists. In the face of this shortage we must construct a scale of priorities and we believe that children should be the first beneficiaries of an expansion in dental services. Hence, the approach to the dental health of children must be essentially preventive. This becomes particularly evident when one considers the importance to dental health in adult life of preventive measures in childhood. On the treatment side, dentists have found it difficult to establish priorities. Obviously the presence of dental caries, acute infections, injuries and pathological lesions is a clear indication of treatment need. "In contrast to the above the diagnosis and priority for treatment of chronic periodontal disease and especially malocclusion are complicated by consideration of the intensity of the anomaly."³ The variable and unpredictable nature of such defects has led to their being neglected except in seriously handicapping cases: nevertheless it is felt essential when planning a treatment service "to provide for these services otherwise the overall service would be severely downgraded".⁴

The relative absence of treatment in this field up to now, handicaps us in estimating the amount of treatment time needed by children for, while we have reliable figures for the most frequent features of treatment, we can make only approximate estimates for the other services needed by these age groups. The shortage of dentists and the acuteness of the problem of dental disorders in children demands the training of a sufficiently large number of technically competent personnel in a reasonably short period of time to provide most of the dental services required by children. The evidence presented above concerning the training of auxiliary workers to provide many of the dental services required by children suggests that a similar arrangement could be introduced in Canada. The course of training for the new dental auxiliary could be patterned on that of the dental auxiliary in the United

¹ *Canadian Dental Association*, brief submitted to the Royal Commission on Health Services, Toronto, March 1962, p. 32.

² This is statistically portrayed in *Canadian Dental Association*, a brief submitted to the Royal Commission on Health Services, Ottawa 1962, Appendix II.

³ *Ibid.*, Appendix II, p. 11.

⁴ *Ibid.*, Appendix III, p. 1.

Kingdom described in Chapter 7. The training might have to be altered in content though not lengthened, and facilities to provide training and a work base would have to be established. Clearly final responsibility and authority for all forms of treatment undertaken by the auxiliary must remain with the dentist.

Information from other dental programmes operating in Europe indicates that priority for treatment is given to children aged six and over. Such a procedure is based on the premise that it is more important to concentrate on the permanent teeth of children than on the deciduous teeth. Other schools of thought emphasize the important effect care of the deciduous teeth has on the subsequent oral history of the patient. We share the latter view and believe that a programme of dental treatment for children ideally should begin with initial care for children at age three. However, in examining the magnitude of the problem we have concluded that initially, the programme must begin with children at age five and six.

In the two succeeding years, two additional age groups could be given initial care, while those already in the programme are given maintenance care, i.e., in the second year of the programme children aged four and five would be included, while the children treated in the first year (now ages six and seven) are given maintenance care. In the third year, the three-year olds are added and the eight-year olds are given maintenance care. In each of the following years, one additional age group is brought in, so that by 1980 the children aged 3-18 will be receiving treatment assuming, of course, that the necessary staff has been assembled to treat them.¹ The estimate of personnel required to implement a children's dental programme is outlined in Table 13-24, and was obtained in the following way:

Based on estimates provided by the Canadian Dental Association,² the average time required to give initial care to a child would be as follows:

1. Polishing of teeth followed by application of topical stannous fluoride	30 min.
2. Caries control consultation	6 min.
3. Examination for dental caries	20 min.
4. Treatment of an average 3.4 cavities per child, i.e., 3.4 x 52 min.	176.8 min.
	<hr/>
	3.88 hrs.

¹ This timing pattern is based on the suggestions made to us by the *Canadian Dental Association*, *op-cit*, p. 42.

² *Canadian Dental Association*, brief to the Royal Commission on Health Services, Toronto, 1962, Appendix III-3, Table III-1. Certain minor adjustments were made to the figures of the Canadian Dental Association, after discussion with CDA officials, e.g., it was calculated that the time needed for caries control consultation is 6 minutes per child.

TABLE 13-24 ESTIMATED PERSONNEL REQUIREMENTS, AND PERSONNEL AVAILABLE FOR CHILDREN'S DENTAL PROGRAMME, CANADA, SELECTED YEARS, 1961-1976

Year	Population	Age Group Covered	Number of Children Covered	Number of Children Using Prog.*	Number of Children Actually Obtaining Care**	Per Cent of Those Using Prog.	Number of Auxil. Needed†	Number of Auxil. Available	Number of Dentists in Programme	Dent. Auxil. Ratio	Children per Dentist	Total Number of Dentists	Pop. per Dentist	Number of Dent. for Resid. Pop.	Resid. Pop. per Dentist
	'000		'000	'000	'000										
1961.....	18,238	—	—	—	—	—	—	—	—	—	—	5,868	3,108	—	3,108
1966.....	20,296	—	—	—	—	—	—	—	—	—	—	6,336	3,203	—	3,203
1968.....	21,190	5-6	920	734	635	86.5	1,519	1,000	650	1:1.5	977	6,656	3,184	6,006	3,422
1971.....	22,590	3-9	3,460	2,679	2,331	87.0	4,418	3,800	1,000	1:3.8	2,331	7,136	3,166	6,136	3,302
1976.....	25,234	3-14	6,320	5,433	5,433	100.0	8,713	10,350	2,178	1:4	2,494	8,770	2,877	6,592	3,004

*Based upon a rising utilization rate of the programme by younger children. Estimated utilization rate is as follows: 40 per cent of 3-year olds were assumed to utilize dental services; 50 per cent of 4-year olds; 70 per cent of 5-year olds; 90 per cent of 6-year olds and 100 per cent of 7-year and older children.

**Based on estimated available personnel.

†Based upon estimated time required for treatment services both initial and maintenance care, and dentist-auxiliary ratio of 1:4.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The time requirements for maintenance care for children already in the programme is estimated at 2.9 hours per child per year.¹ The dental personnel requirement is then obtained by dividing the total time (hours) necessary to give initial and maintenance care to the programme's population by 1,500 hours, the chairside hours of dentists.

Since much of this work can be done by trained dental auxiliaries under the supervision of a qualified dentist, a ratio of four auxiliaries to one dentist is believed to be the optimum.

Because of the difficulty in getting younger children to clinics and the lag in learning experience, it is assumed that initially the programme will not be fully utilized. An estimate of the number of children using the programme, based on a rising utilization rate is shown in Table 13-24. This under-demand will coincide with an under-supply of personnel in the first few years. We estimate that demand and supply will approach 100 per cent in 1971. In that year all children who wish to utilize the programme will be able to do so.

We believe that 1,000 auxiliaries could be graduated annually during the first four years and 1,500 thereafter. These young people would be trained in a special programme which we have outlined in Chapter 2. The attrition rate of the auxiliaries was assumed to rise from 2.5 per cent in 1969 to 5 per cent in 1971 and 10 per cent thereafter.

In the early years of the programme it will not be possible to achieve a ratio of four auxiliaries to one dentist, but as the supply of auxiliaries builds up, this ratio can be reached and thereafter maintained. We have therefore assumed a lower auxiliary dentist ratio for the period 1968 to 1971 and this we consider to be desirable because of the need for greater professional supervision in these years. After 1971 the supply of auxiliaries builds up more rapidly than the programme requirements which will allow for the higher attrition rates as women marry or withdraw. Allowing for this, we estimate that the programme will need 1,500 auxiliaries annually during the seventies. Should this produce more auxiliaries than the programme then requires, such auxiliaries should be licensed to work with dentists in private practice. In addition, we believe, the programme like all new programmes, should be reviewed periodically.

Finally, what would be the provincial distribution of the training of 1,000 dental auxiliaries? Table 13-25 shows a breakdown by provinces of the percentages of children in both the 5-9 and 3-18 age groups.

¹ *Ibid.*, Appendix III-5, p. III-7.

TABLE 13-25 PROJECTED DISTRIBUTION OF DENTAL AUXILIARY GRADUATES BASED ON PERCENTAGE DISTRIBUTION OF CHILD POPULATION, CANADA AND PROVINCES, 1961

Province	Per Cent Ages 5-9	Per Cent Ages 3-18	Distribution of Dental Auxiliaries Graduated Each Year
Newfoundland.....	3.1	3.1	31
Prince Edward Island.....	.6	.6	6
Nova Scotia.....	4.1	4.2	41
New Brunswick.....	3.6	3.7	36
Quebec.....	30.0	30.8	300
Ontario.....	32.4	31.9	324
Manitoba.....	4.9	4.9	49
Saskatchewan.....	5.1	5.1	51
Alberta.....	7.7	7.3	77
British Columbia.....	8.3	8.1	83
Yukon and N.W.T.....	.2	.2	2
Canada.....	100.0	100.0	1,000

SOURCE: Based on Dominion Bureau of Statistics, *Census of Canada 1961*, Vol. I, Part 2, Ottawa: Queen's Printer, 1963, pp. 20-1 to 20-10.

Assuming that to start the children's programme in 1968 the distribution of auxiliaries should be of the order indicated above the question arises: would each province be capable of training the number of auxiliaries required for its programme? To answer this question we assume that a dental school could supervise the training of between 100 and 150 auxiliaries either on the school site or in technical institutes. By applying this yardstick to the various provinces and bearing in mind that 1968 is the target date for initiation of the programme the following results are obtained:

Province	Auxiliaries Needed	Possible Output ¹
Atlantic Provinces.....	138	150
Quebec.....	300	300
Ontario.....	324	350
Prairie Provinces.....	176	200
British Columbia.....	83	100
Yukon and N.W.T.....	12	0
TOTAL.....	1,033	1,100

¹ The intent of this training programme would be to enable each region to train the required number of dental auxiliaries with an allowance for attrition.

Dental Care Needs and Fluoridation

The efficacy of fluoridated water supplies in the reduction of dental decay has been well established. Numerous scientific studies have shown that controlled fluoridation of public water supplies can change the level and nature of dental care needs more than any other single factor.¹ This is strikingly portrayed in Winnipeg which was one of our first major cities to add sodium fluoride to its water supply. In the five years since this step was taken substantial improvement in child dental health has been noted. In 1959 seven children out of 50 needed teeth removed prematurely; in 1963 only one child in 50 needed such treatment.² Despite these scientific findings only about 20 per cent of the Canadian population lives in areas where the public water supply is fluoridated.³ We do not claim that fluoridated water is a panacea for all dental defects but the evidence at our disposal indicates that fluoridation results in a marked reduction in dental caries without any ill effects being noted.

This conclusion has also been reached by the Department of National Health and Welfare after extensive research in the subject of the effect of fluoridation on dental health. We quote:

"It is an established fact, from very extensive research, that the adjustment of the fluoride content of a water supply, whereby there is a concentration of one part fluoride to one million parts of water, brings about an average reduction of 60 per cent in the prevalence of tooth decay to children consuming fluoridated water since birth. No ill effects have been noted.

"This improvement in dental health of children, who will later be adults, ensures an improvement in general health, dental health being an integral part of total health."

We are not suggesting that the introduction of fluoridated water would lessen the need for dental services, but that there would be a change in the nature of dental needs. One research teacher expressed this view as follows:

"... it seems probable that fluoridation, like so many discoveries, may in the process of meeting one need, create new needs of equal or greater magnitude. When fewer teeth are lost or damaged by decay, more youngsters will

¹ See Grainger, R. M., Nikiforuk, G. and Paynter, K. J., *Dental Health and Fluorides*, a submission to the Ontario Fluoridation Investigating Committee, 1959, wherein is contained an extended bibliography, Toronto, 1960.

² *Financial Post*, Toronto, August 24, 1963.

³ "As of November, 1963, more than 3,800,000 people, or 20 per cent of the population, in 188 communities were consuming mechanically fluoridated water. In addition to the 20 per cent of the Canadian population who are consuming water with fluoride content adjusted to one part per million, many thousands of people have been consuming for a lifetime, and even for generations, water which has been fluoridated from underground deposits of fluoride. No ill-effects have been observed." (Statement by Mr. John Munro, Parliamentary Secretary to Minister of Health and Welfare, House of Commons Debates, Ottawa, March 23, 1964, p. 1333.

⁴ Statement by Mr. John Munro, M.P., *op. cit.*, p. 1333.

reach maturity with teeth which warrant periodontal and other maintenance care (cf. p. 4-6). Later on when rehabilitation becomes necessary, full mouth reconstruction will be more frequently indicated, and edentulousness may be postponed for many years, perhaps an entire lifetime."¹

In summary, our analysis of the future supply of dentists has focussed on certain important features. We estimate that with an orderly growth in capacity our supply of dentists would rise to 7,157 in 1971, 10,294 in 1981, and 14,420 in 1991. This growth would require an expansion of present dental school facilities to produce 3,750 dental graduates by 1991, plus four new dental schools producing a further 2,194 dental graduates by 1991. This growth in capacity will require 1,015 teachers by 1986 which is 624 more than the 1961 figure.

Very few immigrant dentists are licensed to practise in Canada. Only 45 are listed in the Directory of the Canadian Dental Association. If licensing regulations are less restrictive we believe more overseas dentists would seek to immigrate to Canada.

In any future expansion of dental services we believe that children should be the first to benefit. The shortage of dentists requires a programme for the training of auxiliary dental personnel to provide much of the additional dental care. The final responsibility for this care would remain with the dentists. We estimate that 1,000 auxiliaries could be trained in each of the first four years of the programme and 1,500 annually thereafter.

FUTURE SUPPLY OF NURSES

As we have described in Chapter 7, it is very difficult to measure the supply of nurses at any moment of time and to measure changes in this supply over a period of time. Available data indicate that there has been a substantial increase in the number of registered nurses in the population as well as in the number of registered nurses actually employed, but they are not sufficiently complete to produce a reliable projection of the future supply of nurses. Without more comprehensive data on the attrition rate due to factors such as marriage, emigration, retirement, and death and the number of married nurses that return to work after their children grow up, projections can be no more than an indicator, although a useful indicator, of the future trend in supply.

¹ Pelton, Walter J., and Bothwell, Ruth D., "The Need and Demand for Dental Care", *Michigan Study*, *op. cit.*, p. 13, as quoted by McFarlane, B., *op. cit.*, Chapter 4.

Before we present our projection it is necessary to examine the recruitment of nurses, future changes in the education of nurses and their relationship to the quality of nursing care since these will affect the quantity and quality of nursing skills that will be available to care for the needs of Canadians.

Recruitment of Nurses

What girls choose nursing as a career? By what processes do girls choose this profession? What effects do schools of nursing have on the number and type of girls who follow this career? If we can answer these questions we will have some indication of the ways in which the supply of nurses can be increased.

According to the findings of a study undertaken for the Commission those girls who are most likely to choose nursing as a career have been described in these terms:

"Specifically, the girl who is most apt to choose nursing is one who comes from a middle class family, in a medium size town, who has average high school grades, who want a job which is appropriate to her abilities and which offers security . . . , who sees herself as being somewhat more competent than most other girls, and who has received parental encouragement for the choice of nursing. The two characteristics which set her apart from the majority of other girls are: (1) that she places considerably more emphasis than most other girls on having an occupation which is important to society and which helps people in need, and (2) that she sees herself as having the ability to exercise self-control in emotionally upsetting situations."¹

Most girls who eventually become nurses usually make their choice of a career before reaching the age of thirteen. Their interest in this type of career is often stimulated by relatives who are nurses and their subsequent decision to become a nurse receives strong parental approval.²

Recruitment programmes organized by schools of nursing appear to have relatively little effect on the number of girls applying for admission to these schools. Apparently most of the larger schools do not actively seek applicants because a sufficient number apply to fill the available places. The recruitment programmes of smaller schools of nursing appear to have limited effect. Two-thirds of the girls who attend these programmes decide not to become nurses.³ Although the number of girls who are stimulated by this means to become nurses is relatively small, there appears to be a

¹ Robson, R., *Sociological Factors Affecting Recruitment into the Nursing Profession*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter IX.

² *Ibid.*

³ *Ibid.*

significant number who have positive attitudes towards such a career, but who, nevertheless, do not become nurses.

"First, generally speaking, girls' attitudes towards the nursing profession are quite favourable; 9% had chosen nursing as a career and were definite in this decision, for another 12% nursing was their first choice, although they were also considering other occupations; a further 11% of the girls indicated a different occupation as their first choice, but were considering nursing as an alternative, and another 25% were not considering nursing at all but said that they would like to become nurses. Thus a total of about 57% of the girls in our sample had favourable attitudes, while 43% said they had never considered nursing and would not like this occupation. Since our sample did not include girls who had already left school in their junior matriculation year, the 57% with favourable attitudes is somewhat higher than we would find in a completely representative sample but even so, we suspect that the true figure would be about 50% or slightly lower, which still represents a considerably higher proportion than the number who actually go into nursing."¹

Why do these girls who form this potential reservoir of nurses decide not to enter the profession? Evidently some feel that the educational period required is too long and too difficult while others see the unpleasant duties associated with caring for patients, the irregular hours, and the discipline associated with nursing as negative features which outweigh the more positive ones.

Our studies show there is a significant proportion of girls who have the characteristics which are appropriate to a nursing career (in the sense that they have characteristics which are similar to those possessed by girls who choose a nursing career), but who, nevertheless, choose another occupation. The occupations which these girls choose are as follows:²

	Per cent Choosing Each Occupation
Therapists	6
Laboratory and X-ray Technicians	7
Practical Nursing	8
Social Work	9
Missionary	2
School Teacher	30
Secretarial Work	10
Airline Stewardess	3
Sales Clerk	1
Typist and Office Clerk	4
Other	20
	<hr/> 100

¹ *Ibid.*

² *Ibid.*

The significant feature of this tabulation is that 21 per cent of these girls choose occupations in the health services field. Evidently these and similar occupations will compete with nursing for the available recruits.

Education and the Quality of Nursing Care

There is a definite relationship between the education of the nurse and the quality of nursing care. Nurses are the first to recognize this. In recent years the Canadian Nurses' Association has turned a critical eye on the field of nursing education in an effort to ensure that the tradition of quality which is characteristic of the nursing profession in Canada is maintained. These critical appraisals have resulted in an increasing concern on the part of the professional nursing associations about the present organization of nursing education.

Today hospitals are constantly pressed to provide service to a population increasingly aware of the health benefit of hospital care. This has tended to make the services of the student nurse essential for the continued operation of the hospital. The teaching function of the hospital school of nursing has assumed less importance and as a result nursing education programmes have suffered. Furthermore, since the nursing curriculum has had to include knowledge of rapid advances in medical technology, and the student nurse has had to provide service in order to repay the hospital for the education which its nursing school has provided, the period required for the student to complete her education has gradually increased to three years.

Criticism of this system of education is of long standing. We have already referred to Weir's recommendations stemming from his study of nursing in 1932¹ which if implemented would have placed nursing education under the control of educational authorities. Such an arrangement may be feasible, but the past thirty years have tended to strengthen the hospital's financial and administrative control over nursing education. The debate continues. National and provincial associations are still pressing for an improvement in the educational preparation of the nurse.

"The preparation of the nurse should be an educational experience and the method by which this can best be achieved is through a school which plans and controls the complete experience of the student'.²"

Today most hospital schools remain under the administrative control of the hospital. The main weakness of this arrangement is that in the student's programme the emphasis is on the service she provides rather

¹ See Chapter 7.

² Canadian Nurses' Association, *Policies Regarding Nursing Service and Nursing Education*, Ottawa: The Association, Revised, 1958.

than on the education she should receive. The time lag between classroom instruction and clinical experience is hardly conducive to effective learning by the nurse. The situation is further aggravated when some students receive clinical experience before the classroom instruction. In addition, almost 60 per cent of formal instruction is given in the first year of the student's programme.¹

In many hospital schools there is a lack of supervision of students during their clinical experience. While this may stimulate the student to learn quickly, it does not contribute to a high standard of patient care. Both the patient and the student are affected adversely.

An additional obstacle to a sound educational programme for nursing students is the inadequate academic standing of the majority of the hospital school teaching personnel. We have noted in Chapter 7, that over 70 per cent of the instructors in hospital schools do not have a B.Sc., or higher degree in nursing, or what should be considered as the minimum qualifications for such positions. Even in the university schools of nursing 58 per cent of the full-time instructors do not hold even the baccalaureate degree. This situation in the hospital schools is aggravated by the rapid turn-over of teaching staff. Only 21 per cent have held their present positions for more than three years.²

The inadequate academic standing and the rapid turn-over of teaching staff in hospital schools of nursing is related, in part at least, to their low salaries which are considerably below those paid to other teachers at the post high school level.³

"The salary differential provides little incentive for nurses to prepare for instructional positions. It would take more than ten years for them to make sufficient money to attend university, not to mention the loss of salary. Salaries are too low to permit savings to finance these courses, and grants through government and other sources are very limited. 64 applications were received in the CNA National Office for one \$1,200 scholarship from prospective teachers for the coming university year, who appeared in considerable need of assistance."⁴

These weaknesses of the present educational programmes of hospital schools of nursing can have an adverse effect on the quality of nursing service. That this is in fact the case has been documented in our studies⁵ which show that the complexities of modern patient care require a highly skilled nurse.

¹ Mussallem, H. K., *Nursing Education in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter VII.

² *Ibid.*

³ *Ibid.*

⁴ *Ibid.*

⁵ Uprichard, M., *Utilization of Nurses in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

A number of studies already completed or now underway provide evidence of the concern of nursing leaders in Canada with the role of the nurse and her educational preparation.

In 1948 the Canadian Nurses' Association with financial assistance from the Canadian Red Cross initiated an experiment in nursing education at the Metropolitan School of Nursing in Windsor, Ontario. This experimental programme known as the Demonstration School had as its objectives:

- "(a) to establish nursing schools as educational institutions, separate entities in their own right.
- "(b) to demonstrate, if possible, that a skilled clinical nurse can be prepared in a period shorter than three years, *once the school is given control of the use of the students' time*. The hope is that a period of two years (or slightly more) would suffice."¹

Dr. A. R. Lord in his evaluation of the Metropolitan Demonstration Training School of Nursing concluded:

"The *average* graduate of the Demonstration School compared with the *average* graduate of the three-year 'Control' school appears to be:

- (a) at least as well-prepared for basic bedside nursing;
- (b) better prepared for Tuberculosis nursing;
- (c) better prepared for Psychiatric nursing; and to use the principles of Mental Health with all patients."

Dr. Lord further stated:

"The conclusion is inescapable. When the school has complete control of students, nurses can be trained at least as satisfactorily in two years as in three, and under better conditions, but the training must be paid for in money instead of in services. Few students can afford substantial fees nor can the hospital pass on such additional costs to the 'paying patient.' Some new source of revenue is the only solution."²

Eight years elapsed before an attempt was made to apply the theory of education used by the Demonstration School. In 1960, the Nightingale School of Nursing, Toronto, initiated a two-year programme using the principles which evolved from the Metropolitan School of Nursing.

Another experiment is being undertaken at the Regina Grey Nuns' Hospital School of Nursing in Saskatchewan. With a grant from the Provincial government, a two-year experimental programme was developed admitting its first class in the fall of 1962. From the regular class admitted to the three-year traditional programme, twenty students were channeled into the

¹ Report of Committee of Canadian Red Cross Society, November 4, 1946, as quoted in Lord, A. R., *Report of the Evaluation of the Metropolitan School of Nursing*, Windsor, Ontario, published by The Canadian Nurses' Association, 1952, p. 7.

² Lord, A. R., *op. cit.*, pp. 53 and 54.

shortened two-year programme, and a further twenty students were selected from the remaining members of the class to act as a control group. All students in the experimental and control groups were selected through the use of psychological tests. This experimental programme will be evaluated in 1965.¹

The Registered Nurses' Association of Ontario has recently approved the development of a diploma programme in nursing at the Ryerson Polytechnical Institute of Toronto. Prior to establishment of this programme, an exploration was made of the facilities at the Institute. This programme is planned for post high school students, and is of three academic years' duration. When established, it will be the first diploma school of nursing conducted within the general education system of a province. Graduates of this programme will be eligible to write nurse registration examinations in the Province of Ontario.

Our studies indicate that two categories of registered nurses are required: one a graduate of a university school of nursing, and the other a graduate of a hospital school of nursing or of another post high school type of school of nursing—a diploma nurse. These would follow the existing educational patterns, but the control of the educational programme for the diploma graduate, the time required to complete it, and the content of the programme would be changed.²

As we noted in Chapter 7, the university schools of nursing offer three types of programmes:

1. A certificate course to graduates of hospital schools of nursing in:
 - (a) nursing education
 - (b) nursing service
 - (c) public health
 - (d) special clinical areas
2. A degree course
 - (a) post-basic
 - (b) basic
3. A graduate degree course

The responsibilities of the university graduate nurse would require as a minimum the educational programme appropriate to the degree course offered by a university school of nursing which now requires four years to complete. Seven university schools of nursing offer this course as an

¹ "Regina Grey Nuns' selects second 2-year class", *Hospital Administration in Canada*, January 1964, p. 13.

² Mussallem, H. K., *op. cit.*, Chapter VII.

integrated programme. In these schools the faculty plans and assumes responsibility for the entire course. Theory, clinical experience, and supervised practice are planned in co-operation with hospitals and other community health agencies.¹

A number of nurses now complete an educational programme at a hospital school of nursing and then decide to complete the additional requirement for the degree course.

A serious problem emerges when one examines the affiliation arrangements between university schools of nursing and hospital schools. In eight of the universities in Canada which grant degrees in nursing, only the first and last years of the degree programme are planned and controlled by the university granting the degree. In other words, these universities are awarding degrees to students regardless of the fact that they may not set the standards which the students must meet for a significant part of the degree programme.

"The soundness of putting a layer of academic subjects over a technical orientation to the major field is questioned, as is the credit value granted for courses obtained in a service-centred agency over which the university has had no control. True, there are some students who have demonstrated that this type of educational programme has provided them with a great breadth of understanding of nursing and the world about them. But the fundamental issue still remains. Is this sound practice in professional education, and should it be perpetuated?"²

Post-graduate degrees in nursing are presently offered by only two Canadian universities, McGill University, and the University of Western Ontario. Beginning in September 1964, the universit  de Montr al will offer a programme to college graduates. The slow growth of graduate programmes in this field is due partly to the lack of faculty-trained nurses with a graduate degree to provide the necessary teaching and research, and partly to the lack of sound undergraduate degree programmes from which post-graduate students could be drawn. The need for graduate training is obvious when one examines the low academic level of the faculty in university and hospital schools of nursing referred to in Chapter 7. Furthermore, with the expanding administrative responsibilities of a certain proportion of university-trained nurses, the growing importance of a number of clinical specialties in nursing, the increasing pressure for research in the field of nursing, and the emergence of the nurse as a consultant in the increasingly complex field of health care, the need for a larger number of nurses with post-graduate degrees seem obvious.

¹ Mussallem, H. K., *op. cit.*, Chapter IV.

² *Ibid.*

The diploma nurse could be trained in an educational programme similar to that now provided for student nurses in hospital schools of nursing, but without the weaknesses which affect the quality of nursing care to which we have already referred. The education of the diploma nurse would be the responsibility of the Director of Nursing Education who would be directly responsible to the hospital board or its representatives. The student nurse would not be required to provide nursing service although in her clinical training in hospital wards and departments a certain amount of service would be a secondary result of her clinical experience. Obviously, if the student nurse is not to provide service to pay for her training, the hospital would have to be reimbursed for the use of its facilities, and the cost of the educational programme would have to be met, in part at least, from student fees. However the length of time required to complete the educational programme should be shortened from three to two years because the service element in the programme would be largely eliminated.

There are two other types of nursing personnel to which we have referred: the psychiatric nurse, and the nursing assistant. As noted in Chapter 7, the psychiatric nurse programmes in the four western provinces were instituted to meet the demand for qualified attendants to care for the mentally ill. But, as noted in Chapter 8, the emerging patterns of care for the various types of psychiatric patients will require the large mental hospital in which the psychiatric nurse is located to assume much less importance in the future than it has in the past.

As we shall show in Chapter 14 the future organization of the care of the psychiatric patient could follow a pattern in which the majority of patients are cared for in psychiatric units of general hospitals, with a residue of chronic long-term psychotic patients remaining in small regional hospitals or other long-term facilities. If a programme such as recommended in Chapter 2 is implemented,¹ in time the need for the psychiatric nurse would disappear in the western provinces. Since the majority of institutionalized patients would be cared for in psychiatric units of general hospitals, they would be cared for by the hospital nursing staff. The present psychiatric nurses could be absorbed gradually into the ranks of the diploma nurses after a short training period and a qualifying examination. The present training programme for psychiatric nurses provides the basis for this additional training.

Much of the work of the nursing team is today performed by the nursing assistant who, in most cases, receives a limited formal course that varies from school to school from 10 to 18 months' duration. We foresee a continuation of this category of nursing service. We believe that in view of the reduction of the training of the diploma nurse to two years, the formal

¹ See Chapter 2, Recommendations 13 to 20.

training period of the nursing assistant must be shortened. Ultimately, perhaps, many will be trained on the job.

Our chief objective in this reorganization of nursing personnel is to reinforce the role of the diploma nurse in her desire to fulfil her historical role by concentrating on bedside nursing care. Only in this way do we foresee an improvement in the quality of patient care. We expect that since a large proportion of those now entering the nursing assistants programmes have an educational standard above the required minimum for this programme, many of these girls would consider a career as a diploma nurse as a preferred alternative, particularly when the course is shortened to two years.

Changes in Nursing Education and the Future Supply of Nurses

The question arises, would there be a sufficient number of nurses available if the foregoing change in nursing education were adopted? In the short-run, the reduction in the amount of service rendered by student nurses would require an increased supply of the services of registered nurses and nursing assistants. In view of the shortages which exist in some areas it would be difficult to provide this increased supply. All changeovers, however, imply difficulties in the transitional stages, and in the long run the supply of diploma nurses would be increased since these nurses would graduate in two years instead of three, and one-third more nurses could be trained with the same facilities. For some time to come, a major shortage of instructional personnel both at the university level and the hospital school level will limit the adoption of new educational programmes.

It cannot be emphasized too strongly that a major effort must be made by governments, hospitals, the health professions and the public if the education of nurses is to be integrated with higher education in general and the quality of their education improved. Our studies indicate that graduates of university schools of nursing should make up one-quarter of the total employed nursing force.¹ Today the ratio is far below this level and little progress has been made to achieving it. For example, in 1961, 1,547 university trained nurses should have graduated if a ratio of 1 out of 4 were being maintained. In fact, only 184 nurses were graduated from university schools of nursing in that year. The magnitude of the problem is apparent. Its solution is a matter of time and resolve to do something about it. In order to encourage young women to become nursing teachers and administrators, financial assistance and other incentives such as incomes corresponding to the responsibilities assumed are required.

¹ Committee for Survey of Hospital Needs, *Education and the Provision of Personnel*, Toronto: The Committee, 1963.

As we have noted previously in this chapter expected income is a factor which has significant implications for recruitment to any profession. Table 13-26 shows that in 1962 the median annual salary of the staff nurse in hospitals compares unfavourably with the salary of ten other types of hospital technical occupations having a high proportion of females. In fact, only two other occupations, the junior laboratory technician and the junior radiological technician, have a lower median annual salary. Furthermore, the rate of salary increase of staff nurses, when computed on the basis of the median annual salary, shows a smaller increase than five other occupations. There can be little doubt that comparatively low incomes place the nursing profession in an unfavourable position in the competition for recruits. This evidence demonstrates the necessity to offer the nursing profession salaries commensurate with the responsibilities they carry.¹ Nor should it be forgotten that the married non-practising nurse provides a potential supply of professional service if employment is sufficiently attractive.

How Many Nurses?

On the evidence presented to us there is, at present, a shortage of nurses in some communities. For example an examination of the adequacy of the number of practising nurses available in the Metropolitan Toronto area showed that "there was a shortage of 680 graduate nurses in the short stay hospitals". This was equivalent to 19 per cent of the total number of nurses employed, or 3,595.² In addition, as the Canadian population grows, the existing supply must be expanded to meet its needs.

Our analysis of the present nursing education system, its relationship to the quality of nursing care, and the possible future changes in the preparation of the nurse, along with the limitations of the historical data and the time required to implement the recommendations of this Commission makes any projection of the future supply of nurses a hazardous venture. We have, however, attempted to estimate the possible need for nurses in the various areas of service in the near future taking into account at least two possible future changes, the re-organization of mental health services, and the decline in the number of patients in tuberculosis sanatoria.³ No data are available at present which would allow us to estimate the effect of other changes in health care such as the growth of group practice and home care

¹ See Chapter 2, Recommendation 128.

² Committee for the Survey of Hospital Needs, *Education and the Provision of Personnel*, Toronto: The Committee, 1963, Part Sixteen, p. 14. Shortages were also noted in the following reports: *Manitoba Hospital Survey Board Report*, Hospital Personnel, Winnipeg: 1963, p. 49. School of Nursing, University of Manitoba, brief to the Manitoba Hospital Survey Board, Winnipeg, 1962. The Registered Nurses' Association of Nova Scotia, brief to the Royal Commission on Health Services, Halifax, 1961. Registered Nurses' Association of British Columbia, brief submitted to the Royal Commission on Health Services, Vancouver, April 1962.

³ These changes are discussed in Chapters 7 and 14.

TABLE 13-26 MEDIAN ANNUAL SALARIES OF SELECTED HOSPITAL PERSONNEL AND THOSE IN AUXILIARY HEALTH OCCUPATIONS, ALL HOSPITALS, COMPARED WITH AVERAGE WEEKLY WAGES AND SALARIES, CANADA, SELECTED YEARS 1956-1962

Occupation	Median Annual Salary					Index—1956 = 100 unless otherwise indicated				
	1956	1958	1960	1961	1962	1956	1958	1960	1961	1962
Staff Nurse.....	2,640	3,120	3,360	3,480	3,650	100.0	118.2	127.3	131.8	138.3
Dietitian.....	2,820	3,420	—	4,140	4,250	100.0	121.3	—	146.8	150.7
Dietitian (Head).....	3,480	4,560	—	5,280	5,900	100.0	131.0	—	151.7	169.5
Lab. Technician (Junior).....	2,400	2,820	3,660	3,240	3,550	100.0	117.5	152.5	135.0	147.9
Lab. Technician (Senior).....	3,000	3,420	3,720	3,960	4,100	100.0	114.0	124.0	132.0	136.7
Radiological Tech'n. (Junior).....	2,280	2,760	3,120	3,180	3,350	100.0	121.1	136.8	139.5	146.9
Radiological Tech'n. (Senior).....	3,000	3,300	3,600	3,840	3,950	100.0	110.0	120.0	128.0	131.7
Physiotherapist (Junior).....	—	3,000	3,360	3,600	3,900	—	100.0	112.0	120.0	130.0
Physiotherapist (Supervisor).....	—	4,140	4,290	4,620	5,000	—	100.0	103.6	111.6	120.8
Occupational Therapist (Junior).....	2,460	3,000	3,360	3,780	3,950	100.0	122.0	136.6	153.7	160.6
Occupational Therapist (Supervisor).....	—	3,960	4,380	4,620	4,550	—	100.0	110.6	116.7	114.9
Average Weekly Wages and Salaries at July 1.....	64.56	70.70	75.74	78.55	80.88	100.0	109.5	117.3	121.7	125.3

SOURCE: Data supplied by Dominion Bureau of Statistics, Employment and Payrolls Section, and Pay Research Bureau, Civil Service Commission, based on periodic surveys of selected hospitals of 200 beds and over.

programmes. Our projections in this area have been limited to the year 1971 and make no distinction between diploma nurses and university graduates.

As an indicator of the need for nurses in various fields of service in institutions such as public general and allied special, mental, tuberculosis and other hospitals, the population-nurse ratio involves a good deal of oversimplification. Instead we have estimated what the ratio of nursing days to patient-days was in 1961 in the following areas: public general and allied special hospitals, mental hospitals, tuberculosis hospitals and other (private and federal) hospitals.¹

Two projections of nursing care were then made, one assuming no change in the present trend of treatment for the mentally ill and one assuming a more rapid transfer of patients with mental illness to active treatment hospitals. Table 13-27 indicates the estimated need for nurses under our first assumption. Multiplying the number of projected days of hospital care² as shown in Table 14-2, and assuming that the amount of nursing care provided is maintained at the level existing in 1961, it is estimated that the number of nurses in public general and allied special hospitals might increase from 36,583 in 1961 to 48,081 in 1971. Nurses in mental institutions would increase from 4,200 to about 5,000 while the number in tuberculosis sanatoria would fall from 1,157 to 545. The number of nurses in other hospitals is also projected to decline slightly from 3,100 to 2,984.

The number of nurses required in areas such as public health, private duty, physicians' offices, nursing administration and industrial health has been projected on the basis of limited historical data and can only be considered an approximation. The total number of nurses in this area is projected to increase from 15,754 in 1961 to 22,252 in 1971.

From 1961 to 1971 it is projected that the total number of nurses should increase from 60,854 to 78,868. This is the equivalent of a net increase of about 18,000 nurses or an annual rate of increase of about 1,800 by 1966 and 1,940 by 1971.

If the changes in the mental health services programme to which we have briefly referred in this chapter and which are further discussed in Chapters 8 and 14, are introduced, they will require an increase in the amount of nursing service provided to a segment of the population of psychiatric patients. We assume that patients treated in the psychiatric units of general hospitals will receive the same amount and concentration of nursing care as is provided for other patients in public general and allied

¹ The estimate was prepared on the assumption that two part-time nurses were the equivalent of one full-time nurse and that each nurse worked the equivalent of 235 days a year. Multiplying the number of full-time equivalent nurses by the number of days and dividing this by the number of patient-days yield the nurse day-patient day ratio.

² Patient-days relate to adult and child patient-days only. If the projected days of newborn care were included it would not affect the projection by a significant amount.

TABLE 13-27 ESTIMATED NUMBER OF GRADUATE NURSES REQUIRED BY AREA OF SERVICE ASSUMING NO CHANGES IN MENTAL HOSPITAL PROGRAMME, CANADA, SELECTED YEARS, 1961-1971

Year	Public General and Allied Special Hospitals		Mental Institutions		Tuberculosis Hospitals		Other Hospitals*		Other Areas of Service**		No. of Nurses Required for Increase in Patients
	No. of Patient Days	No. of Nurses††	No. of Patient Days	No. of Nurses*	No. of Patient Days	No. of Nurses	No. of Patient Days†	No. of Nurses††	No. of Nurses in All Areas of Service		
	(millions)		(millions)		(millions)		(millions)				
1961	30.60	36,583	24.7	4,200 ^b	2.32	1,157	5.12	3,100	15,754	60,854 ^e	—
1963	32.26	38,587	25.7	4,331	2.18	993	4.94	3,010	16,914	63,835	1,473
1966	35.12	41,983	27.2	4,583	1.83	789	4.87	2,975	18,854	69,174	1,815
1971	40.21	48,081	29.7	5,005	1.24	545	4.86	2,984	22,252	78,868	1,940

*Includes private and federal hospitals.

**Includes public health, private duty, doctors' offices, associations, and occupational health.

†Excludes newborn.

††Assumption made that two part-time nurses are equivalent to one full-time nurse.

^aIncludes psychiatric nurses.

^bEstimated.

^cThe difference between this total and the 61,699 reported in the 1961 Census is due to the possible over-estimate in the Census data which is a simple count of those claiming to be active graduate nurses, and to the substitution of full-time equivalents for part-time nurses in calculating the number 60,854.

SOURCE: Table 14-2. See also Department of National Health and Welfare, Research and Statistics Division, and Dominion Bureau of Statistics, *Tuberculosis Statistics, 1961*, Ottawa: Queen's Printer, 1963.

special hospitals. Those patients in mental hospitals will continue to receive the same kind of nursing treatment as is currently provided. By increasing the number of patients (number of patient-days) receiving the more intensive care provided in the psychiatric units, the number of nurses required will rise even though the absolute number of patient-days declines. The effect on the demand for nurses of these changes is indicated in Table 13-28. By 1971 an additional 1,724 nurses are required over and above those necessary to meet the previous projection.

In order to present a range of estimates an additional projection of need was made based on the assumption that the improvement in the amount of registered nursing care provided in public general and allied special hospitals which has characterized the post-war period will continue in the next decade.¹ Table 13-28 indicates the number of nurses required with this assumption. The number of nurses needed now rises to 99,230 by 1971, an increase of almost 40,000 over the decade; while the annual net increment needed by 1971 is 4,469, more than double that required by Projection 1. With changes in the treatment of the mentally ill, the additional number of nurses required would be over 42,000 and the annual net increment would be 5,165.

In view of the trends in the supply of nurses that have operated in the post-war period, what is the likelihood of meeting this demand?

Since we do not know the annual attrition rate due to emigration, death, retirement or marriage nor the inflow of married nurses back into the profession, projecting the supply of nurses yields only an approximate estimate of total supply. On the other hand changes in the nature of nursing education, particularly changes in the length and requirements of degree and diploma courses make the projection of existing trends somewhat doubtful. However, if we assume that the current trends in nursing education do not change drastically down to 1971, and that the profession remains attractive to a sufficient number of girls 18 years of age to enrol in schools of nursing or university nursing programmes, we project that the annual increment of new graduates, as shown in Table 13-28, will rise to 7,342 by 1966 and to 8,586 by 1971. This projection is consistent with the projected growth of hospitals and nursing education faculties in universities.

The number of nurses gained annually through immigration is projected at around the 1960 level of about 1,300.² Adding projected new graduates and immigrant nurses, it is estimated that the gross addition to

¹ The ratio of nurse-day to patient-day can also be expressed as its reciprocal; that is the average number of patients per nurse on *any one day*. In Projection 1 the ratio in public general and allied special was projected at 3.56 down to 1971. In Projection 2 this ratio is projected to decline to 3.0 in 1966 and to 2.5 in 1971. No adjustment has been made to the ratios in other areas.

² See Table 7-19.

TABLE 13-28. ESTIMATED ADDITION TO THE SUPPLY OF NURSES, CANADA, SELECTED YEARS, 1961-71

1 Projection with no improvement in nursing care

2 Projection with increased nursing care in public, general and allied special hospitals

Year	Estimated Requirements		Estimated Addition to Supply				Estimated Annual Excess of Supply Over Demand	
	Total Number of Nurses in Hospitals and Other Sources of Empl.		Average Number of Nurses Required for Increment in Patient-Days		Estimated Yearly Addition to Nursing Stock		1 (8) = (7) - (3)	2 (9) = (7) - (4)
	1 (1)	2 (2)	1 (3)	2 (4)	Graduates (5)	Immigrant Nurses (6)		
1961	60,854	60,854	—	—	6,188	1,108	—	—
1963	63,835	66,855	1,490	3,000	6,143	1,300	9.33	4,443
1966	69,174	76,943	1,779	3,363	7,342	1,300	9.92	5,279
1971	78,868	99,230	1,938	4,469	8,586	1,300	10.12	5,437
With Changes in Mental Health Services Programme								
1966	69,382	77,151	1,949	3,432	7,342	1,300	9.65	5,210
1971	80,592	102,977	2,242	5,165	8,586	1,300	9.48	4,721

SOURCE: Based on Tables 13-25, 14-2 and 14-3.

the number of nurses from these sources would amount to 8,642 in 1966 and 9,886 in 1971, compared with 7,296 in 1961.

On the basis of the estimated need for nurses and additions to the supply, we can now arrive at some estimate of the relationship between demand and supply. On the basis of Projection 1 and no change in the trend of mental health care, Table 13-28 indicates that by 1971 projected supply would exceed projected demand by 7,948 nurses which would then be available along with nurses who return to the practice of their profession, to meet the drain of nurses who migrate to the United States or other countries, marry and temporarily leave the profession, retire or die.¹ Compared with the projected total number of nurses in 1971, this is the equivalent of an attrition rate of 10 per cent. On the basis of Projection 2, the excess of supply over demand is 5,437 in 1971 and the estimated attrition rate is 5.48 per cent. With changes in the mental health programme, the projected excess of supply in 1971 varies between 7,644 and 4,721, while the attrition rate varies between 9.48 and 4.58 per cent.

On the basis of this evidence it is likely that the supply of nurses will be sufficient to match the demand on a national basis²—at least up to 1971. Even with a high projection of the trend rate of growth of demand for professional nurses, the projected supply still permits nearly a 5 per cent attrition rate; a slower growth in the net supply of nurses would almost certainly be associated with a fall in the amount of professional nursing service rendered each patient thus permitting a higher attrition rate.

CONCLUSION

If the level of health services is to be maintained at that existing in 1961 as well as improved both in quantity and quality over the period 1961-1991, it is evident that the supply of qualified health personnel must continue to expand.

The magnitude of the task is evident from the increased number of all health professionals and other personnel that our projections indicate will be needed both over the decade 1961-71 and the period 1961-1991. The supply of physicians, as indicated in Table 13-29 must increase at a rapid rate. To produce even the small improvement in the population-physician ratio that we have projected over the decade 1961-1971, the number of physicians must increase by 5,344, while the gross increment,

¹ The excess supply of demand would be reduced to the extent that nurses are employed on a part-time basis as more nurses would be required to match the need projected for full-time equivalents.

² This does not preclude the existence of regional shortages as noted in Chapter 7.

TABLE 13-29 PROJECTED SUPPLY OF PHYSICIANS AND DENTISTS AND POPULATION PER PHYSICIAN AND DENTIST RATIOS, CANADA, SELECTED YEARS 1961-1991.

Year	Physicians		Dentists	
	Number	Population-Physician Ratio	Number	Population-Dentist Ratio
1961.....	21,290	857	5,868	3,108
1966.....	23,708	856	6,386	3,179
1971.....	26,634	848	7,157	3,156
1976.....	29,883	844	8,592	2,936
1981.....	33,531	842	10,294	2,744
1986.....	37,053	851	12,188	2,589
1991.....	40,643	864	14,420	2,435

SOURCE: Tables 13-3, 13-12.

that is the number needed to increase the supply as well as to replace those lost to the profession through emigration, retirement and other causes, is of the order of 7,100. With the growth of population projected for the decade of the seventies, the net addition to the supply must be of the order of 6,900 while between 1981 and 1991 the net increment needed is over 7,100.

In view of the difficulty in expanding the supply of dentists in the short run, the 1,290 net increase in supply projected for the decade 1961-71 is not even sufficient to maintain the population-dentist ratio at its present level. Again additional personnel must be found to offset the attrition through time and emigration, and the gross increment over this decade is projected at about 2,130. To produce an improvement in the population-dentist ratio, as indicated in Table 13-11, it will be necessary almost to double the *net* increase in supply over the decade 1971-81 to 3,100 dentists while for the period 1981-1991 the additional number of dentists required amounts to around 4,100.

Between 1961 and 1971 alone the supply of qualified nurses must increase by over 20,000 if present standards are maintained and could amount to nearly 42,000 if improved standards of patient care are provided. At the same time the supply of university trained nurses must expand rapidly from its present low level if the quality of nursing education and nursing care is to be maintained and improved. To meet even minimum standards it would be necessary to expand the annual output of university nursing graduates from the 1961 level of 1,114 to many times this figure by 1971 to approach what has been presented to us as a desirable ratio of one university trained nurse to three diploma nurses.

What is true for physicians, dentists and nurses, is also true for dental auxiliaries. In order to implement our recommended children's dental programme by 1968 we must produce at least 1,000 dental auxiliaries by that year and have available some 10,350 by 1976.

The achievement of these goals, while maintaining and improving the quality of professional personnel will require a determined effort by the professions, the public and governments. To increase the supply of professional personnel we have recommended that educational facilities be expanded and financial aid be provided for the support of higher education in the health professions. The relevant recommendations are outlined in Chapter 2¹ and the reasons for them in Chapter 13 above. The cost of implementing such recommendations appears in Chapter 20.

¹ See Chapter 2. Recommendations 124 to 174.

Hospitals

In this chapter we are primarily interested in assessing our past experience in the utilization and growth of hospital facilities as a basis for estimates of our future requirements for these facilities. Other health facilities, such as educational and training institutions, and dental clinics are discussed in Chapter 13.

HOSPITAL CARE

How many hospital beds will be needed in the future is a question which is difficult to answer given the rapid changes that have occurred and still are occurring in the provision of hospital services. Advances in diagnostic and therapeutic techniques involve new demands for hospital care and new construction, an array of new and expensive equipment, and an increase in the quality and quantity of hospital personnel.

In Chapter 8 we have outlined the changes in the utilization of hospitals and indicated the rise in days of care per 1,000 persons, particularly in general hospitals. In Chapter 11 we have shown that per capita expenditures on hospital services had risen from \$5.50 in 1926 to \$50.65 in 1961. In constant (1957) dollars, or volume of consumption, this represents a rise from \$17.95 to \$48.84. Of vital concern to the Commission is the future rate of growth of hospital utilization both because it influences the demand for personnel as well as the cost of health services.¹ In this chapter we outline the factors that may affect the use of hospitals in the future. In view of the rapid changes that are at present underway, we have not extended our projections beyond the year 1971.

Further, we have not attempted to present a detailed classification for acute hospital beds, chronic hospital beds, psychiatric beds etc. This is in accord with our view that hospital care should be provided, where possible, in hospital centres rather than in isolated or segregated institutions. But it is also in accord with the present situation where long-stay patients,

¹ See Chapters 11, 13 and 20.

psychiatric patients and tuberculous patients are found in public general hospitals. Our classification therefore combines general and allied special hospitals, which covers public, private and federal hospitals providing active treatment, and chronic and convalescent hospital care, along with psychiatric care and tuberculosis care provided in special units attached to general hospitals, mental hospitals and tuberculosis hospitals.

FUTURE UTILIZATION RATES

In estimating future utilization rates and hence bed requirements of hospitals, the various factors and alternative services mentioned in the foregoing pages should be taken into account. The development and increasing use of alternative services such as out-patient clinics and organized home care programmes are bound to have some effect on the future demand for hospital facilities. But these, as well as changing patterns in psychiatric care, rehabilitation, medical group practice, medical and out-patient care insurance, have not been sufficiently evaluated to permit the measurement of their impact on the hospital. Home care is expected to relieve the pressure on hospital beds to some extent, and rehabilitation may remove some patients from long-stay beds but bring others to the hospital for active rehabilitation care. The lack of information on these various programmes is due partly to their comparatively recent origin, and their still largely experimental state.¹ New treatment methods of the future are, of course, unpredictable but they may work either way. For example, new forms of drug therapy may enable some patients to be treated at home, but new equipment or treatment methods may require that the patient be treated in hospital. Thus, we cannot *predict* what the future need or demand for hospital beds will be, although we can make projections for a limited period based on certain assumptions.

Generally speaking, we assume that any reorganization of health services (e.g., development of home care programmes, new patterns of psychiatric care, new treatment methods) will proceed gradually so that their full effect will not be felt in the period covered by most of our projections. We consider this to be a realistic compromise between what one might like to see achieved on the one hand, and what is likely to be implemented on the other.

The many factors noted above affecting the planning as well as the operation of hospitals render projections more subject to error the more detail one attempts to incorporate. It is for this reason we have avoided regional or provincial projections. Estimating the hospital requirements for

¹ Home care programmes and rehabilitation care are discussed in more detail in Chapter 15.

a particular area is a far more complex task. Differences between provinces exist and will continue to exist although the continuing effort to promote more uniform standards of care will have a levelling effect. For much the same reasons we have avoided a detailed projection of types of hospital. Although we apply our assumptions to the basic traditional types of institutions (i.e., general, mental, and tuberculosis hospitals) the emphasis is on the total future hospital beds. As we have indicated the trend towards integration of mental and tuberculosis care into the general health services is strongly reflected in the hospital field. Other changing patterns in hospitalization have, in some instances, opposite tendencies. An example is the separation of chronic patients in chronic hospitals and nursing homes on the one hand, and the provision to some of these patients of active rehabilitation services on the other. The future effect of such trends is difficult to foresee in quantitative terms, but here again the over-all impact on the total supply of hospital beds will be minimized.

The projections are outlined below but they must be periodically reviewed in order to ensure that the supply of hospital beds is in accord with population growth and changes in medical care.

General and Allied Special Hospitals

From Table 14-1 it can be seen that between 1948 and 1961 the average length of stay in general and allied special hospitals¹ remained fairly constant at around 10 days for Canada, but that the days of care per thousand population increased by 360 days, or just over 27 per cent, during the same period. This table indicates that the utilization rate of general and allied special hospitals,² expressed as the number of admissions per 1,000 population, rose from 111 in 1948 to 149 in 1961 or by 34 per cent. With the introduction of hospital insurance programmes in the provinces in 1959 and 1960 we might have expected the admission rate to increase rapidly. The Canadian rate had risen substantially between 1948 and 1956, but between 1957 and 1958 it levelled off. When the Hospital Insurance Programme was introduced, admission rates rose but slowly, with the increase being most marked in the Atlantic Provinces and Quebec. In addition, there was a slight increase in the average length of stay of patients in hospital although again this differed between provinces.

We are basing our projections on the expected utilization of hospitals in the period from 1963 to 1971, commencing with the estimated number

¹ Excludes mental institutions and tuberculosis sanatoria but includes public, private, and federal acute treatment, chronic, and convalescent and other special hospitals.

² That is, general, chronic, convalescent, maternity and other (including orthopaedic, children's and isolation) hospitals; excluding mental and tuberculosis institutions and those providing custodial or domiciliary care only. See Dominion Bureau of Statistics, *Hospital Statistics, Vol. I—Hospital Beds, 1959*, Ottawa: Queen's Printer, 1961, p. 11.

TABLE 14-1 HOSPITAL UTILIZATION RATES PER GENERAL AND ALLIED SPECIAL HOSPITALS, CANADA AND PROVINCES, SELECTED YEARS, 1948-1961*

Province	1948	1950	1952	1954	1956	1957	1958	1959	1960	1961
Patient-Days per 1,000 Population										
Canada.....	1,318	1,411	1,481	1,533	1,568	1,577	1,578	1,624	1,656	1,678
Newfoundland.....	—	—	—	1,245	1,259	1,226	1,279	1,276	1,284	1,262
Prince Edward Island.....	1,370	1,205	1,317	1,330	1,438	1,498	1,554	1,586	1,562	1,599
Nova Scotia.....	1,093	1,106	1,233	1,198	1,228	1,265	1,242	1,394	1,421	1,429
New Brunswick.....	1,259	1,234	1,190	1,231	1,289	1,292	1,274	1,441	1,658	1,675
Quebec.....	1,122	1,270	1,351	1,406	1,438	1,463	1,457	1,489	1,491	1,536
Ontario.....	1,282	1,362	1,417	1,504	1,569	1,576	1,566	1,622	1,677	1,717
Manitoba.....	1,425	1,394	1,517	1,524	1,404	1,447	1,574	1,630	1,719	1,767
Saskatchewan.....	1,820	2,163	2,115	2,010	2,120	2,322	2,308	2,277	2,281	2,249
Alberta.....	1,632	1,516	1,660	1,803	1,914	1,838	1,887	1,992	1,971	1,922
British Columbia.....	1,548	1,682	1,774	1,801	1,773	1,673	1,640	1,630	1,647	1,661
Yukon and NWT.....	3,314	3,896	5,414	8,088	4,850	4,602	4,301	3,390	3,028	1,059
Admissions per 1,000 Population										
Canada.....	111	119	128	132	140	140	142	143	145	149
Newfoundland.....	—	—	—	81	91	97	101	102	105	109
Prince Edward Island.....	128	115	126	134	144	143	148	149	155	155
Nova Scotia.....	103	109	120	125	132	135	135	143	145	143
New Brunswick.....	121	131	129	141	145	148	149	156	169	168
Quebec.....	75	83	93	95	108	109	113	115	114	127
Ontario.....	109	114	124	134	140	140	140	140	142	148
Manitoba.....	126	133	145	142	146	156	164	166	168	166
Saskatchewan.....	172	200	204	202	205	215	212	210	214	212
Alberta.....	169	173	187	191	203	195	199	197	196	190
British Columbia.....	145	152	164	160	163	155	154	157	163	167
Yukon and NWT.....	125	86	62	74	140	198	187	121	144	—
Average Length of Stay of Separations										
Canada.....	10.0	9.9	10.0	10.1	10.0	9.8	9.8	9.8	9.9	10.0
Newfoundland.....	—	—	—	13.4	13.9	12.5	11.9	11.4	11.1	11.1
Prince Edward Island.....	10.4	11.0	10.5	9.6	9.5	10.1	10.0	9.8	9.1	9.9
Nova Scotia.....	10.0	9.8	10.3	9.6	9.4	9.5	9.3	9.4	9.6	9.8
New Brunswick.....	9.9	9.0	9.0	8.3	8.3	8.1	7.8	8.4	9.6	9.4
Quebec.....	11.5	11.1	11.2	11.0	11.0	10.7	10.8	10.4	10.0	10.4
Ontario.....	9.8	10.0	9.8	9.9	9.8	9.8	9.7	9.9	10.2	10.4
Manitoba.....	9.4	8.8	8.5	8.4	8.6	8.3	8.6	8.9	8.8	9.0
Saskatchewan.....	10.2	10.0	10.3	10.1	10.4	10.0	9.9	9.9	9.8	9.2
Alberta.....	9.2	8.6	8.9	8.8	8.7	8.5	8.5	9.1	9.0	9.0
British Columbia.....	9.9	10.2	10.8	10.6	10.0	9.9	9.8	9.7	9.8	9.7
Yukon and NWT.....	15.8	10.1	77.8	137.0	—	—	—	—	—	—

* Excludes new-born admissions and all admissions to federal hospitals. From 1948 to 1958 includes public hospitals with data adapted from Dominion Bureau of Statistics, *Annual Reports of Hospitals*, 1948 to 1952, and *Hospital Statistics*, 1954 to 1958, Vol. 1. From 1959 to 1960 includes budget review hospitals (plus contract hospitals in the case of Newfoundland, Northwest Territories, and Yukon), using lists of such hospitals at time of entry into hospital insurance programme, for provinces and territories not participating during one or both years in question. In the case of British Columbia includes 5 public hospitals (1959) not covered by hospital insurance programme, but which reported to Dominion Bureau of Statistics the previous years. Based on data compiled by Research and Statistics Division from Annual Returns of Hospitals. From 1952 to 1960 includes some adjustments for estimated admissions to non-reporting hospitals based on the ratio of admissions to beds in reporting hospital in each province.

SOURCE: Department of National Health and Welfare, *Hospital Care in Canada*, and 1961 data supplied by the Department.

of days of hospital care. We assume that by and large the trend rate of growth of demand for hospital services in the period 1958-61 will continue, allowing for some provinces with low utilization rates and bed ratios in general hospitals to approach more closely the national level. On the whole, however, we anticipate that the factors which tend to increase the demand on hospital facilities, and those which tend to decrease it, will remain in balance during the coming few years. It is too early to assess fully the impact of the Hospital Insurance and Diagnostic Services Act because it has not been in operation long enough in all provinces. The experience of the hospital insurance plans in Saskatchewan and British Columbia indicates that it takes several years for the initial growing demand to level off. Nor do these two provinces provide a clear and uniform picture of the effects of hospital insurance even over the fairly long period since their inception.

Both Saskatchewan and British Columbia have experienced a levelling off in the rate of hospital days provided. In both provinces this has taken place since the mid-fifties, after the insurance plans had been in operation in these provinces for about a decade. Whether the recent slight rise in British Columbia and perhaps a further decline in Saskatchewan will result in the two rates coming closer remains to be seen. Also subject to future analysis are the effects in either province of social and geographic conditions as well as the practice of co-insurance in British Columbia. We have assumed, therefore, that the rate of patient-days per 1,000 population for Canada as a whole will continue to rise slowly and by 1971 settle somewhere between the rates of these two provinces as shown in Table 14-2.¹ Thus from 1961 to 1971 it is projected that days of care per 1,000 persons will rise from 1,959 to 1,995; an increase of about 40 days over the decade. This compares with an increase of 63 days in the four-year period 1957-61. The downward trend in care provided in private and federal hospitals which characterized the period 1957-61 is projected to 1971 but is offset by an increase in public hospitals from 1,678 to 1,780 days per 1,000 persons. Including new-born hospital days we project that by 1971 total days of hospital care in general and allied special hospitals will rise from 38.65 million to 48.84 million and that days of care per 1,000 persons will rise from 2,123 to 2,162. Of the increase in days of hospital care almost 91 per cent is attributable to increased population and only 9 per cent to more hospital care per 1,000 persons.

¹ The figures for new-born hospital care shown in Table 14-2 are based on the projected fertility rates assuming the present average length of stay for the new-born to continue. See Stukel, A., "Population Projections 1966-1991", Appendix E, in Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 14-2 ESTIMATED DAYS OF HOSPITAL CARE PER 1,000 PERSONS AND TOTAL DAYS OF CARE, BY CLASS OF HOSPITAL, CANADA, SELECTED YEARS, 1957-1971

Year	General and Allied Special Hospitals				All General and Allied Special Hospitals	Mental Hospital Care†	Tuberculosis Hospital Care ^a	All Hospital Care
	Public Hospitals*	Private and Federal Hospitals**	Sub-Total	New-born Hospital Care†				
Total Days of Care Assuming Existing Programmes (millions)								
1957.....	26.20	4.36	30.56	2.64	33.20	23.54	3.89	60.63
1958.....	26.95	4.43	31.38	2.67	34.05	24.06	3.41	61.52
1959.....	28.40	4.38	32.78	2.83	35.61	23.92	3.13	62.66
1960.....	29.60	4.93	34.55	2.96	37.51	24.34	2.95	64.80
1961.....	30.60	5.12 ^b	35.72	2.93 ^b	38.65	24.74	2.32 ^b	65.71
1963 ^b	32.26	4.94	37.20	3.11	40.31	25.72	2.18	68.61
1966 ^c	35.12	4.87	39.99	3.29	43.28	27.20	1.83	72.31
1971 ^c	40.21	4.86	45.07	3.77	48.84	29.71	1.24	79.79
Days of Care per 1,000 Persons Assuming Existing Programmes								
1957.....	1,577	319	1,896	159	2,055	1,417	234	3,706
1958.....	1,578	308	1,886	156	2,042	1,409	200	3,651
1959.....	1,624	271	1,895	162	2,057	1,368	179	3,605
1960.....	1,656	291	1,947	165	2,112	1,362	165	3,637
1961.....	1,678	281	1,959	164	2,123	1,356	127	3,606
1963 ^b	1,700	260	1,960	164	2,124	1,355	115	3,594
1966 ^c	1,730	240	1,970	162	2,132	1,340	90	3,562
1971 ^c	1,780	215	1,995	167	2,162	1,315	55	3,532

*Public active treatment and chronic and convalescent hospital care. Includes psychiatric care and tuberculosis care provided in public active treatment hospitals.

**Private and federal active treatment and chronic and convalescent hospitals. Includes psychiatric units and tuberculosis units in federal hospitals.

†Public and private hospital care.

‡Includes care provided in public mental institutions and homes for the mentally retarded.

^aIncludes some psychiatric and chronic hospital care provided in tuberculosis hospitals.

^bEstimated.

^cProjected.

SOURCE: Department of National Health and Welfare, *Hospital Care in Canada*, 1962, Hospital Insurance and Diagnostic Services Act, Report for the Fiscal Year—Ended March 31, 1963; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Although we project a further slowing down in the rate of growth of hospitalization, is it necessarily the case that we must expect it to continue to climb slowly as it has in the period since 1957, but climb nevertheless?

To answer this question would require data which show the relationship between hospital utilization and the factors described in other sections of this Report such as the types of conditions treated in hospital, changes in attitude towards hospitalization leading to increased use of the hospital for childbirth, the age and sex composition of the population, rural and urban residence, income status and hospital prepayment, the quantity and types of hospital or alternative facilities available, advances in the general level of education and the increasing ability and propensity of the physician to treat his patients in the hospital. There is little doubt that each of these factors affects the rate of hospitalization, but with the data at our disposal we cannot determine their precise effect.

Apparently, to some extent in this area supply often creates its own demand. As new beds become available they are rapidly filled with patients, even where the decision to build has been affected by considerations other than actual needs: philanthropy, local pride, or even politics. The extent to which this demand is kept unnecessarily high due to lack of alternative community services is difficult to judge, but an increase in the number and use of home care programmes and in hospital out-patient departments will have an undoubted influence in lowering the demand for hospital care. With the present lack of home care programmes, and the fact that out-patient care is not covered as a benefit in the hospital insurance programmes of some provinces, a significant number of patients are admitted to hospital who could be treated at home or in the out-patient department. The lack of coverage of out-patient services under the provisions of the provincial hospital insurance programmes is obvious from the following list. Only in Nova Scotia, Prince Edward Island and Newfoundland are laboratory and radiological procedures included which could lessen the demand for in-patient care.

We would, however, not accept the mere fact that hospital beds have been filled as fast as they could be built as conclusive proof that we are faced with some kind of inescapable law which will hold indefinitely. One could argue of course, that the growing use of hospital beds with their growing supply is proof that there remains a backlog of unmet need, and that the higher bed-population ratio in some areas is the result of varying social and geographic circumstances or patterns of health services. We know little of the extent to which the actual use of in-patient hospital care exceeds the actual need or falls behind it. In other words, are patients needlessly admitted or staying longer than necessary despite the attending physician's responsibility for his patient's hospital stay, the work of admission-discharge

OUT-PATIENT PROVISIONS OF PROVINCIAL HOSPITAL INSURANCE PROGRAMMES, APRIL, 1962

Province	Services	Authorized Charges
British Columbia.....	(i) Emergency (24 hours)* (ii) Minor surgical procedure.	\$2
Alberta.....	Nil	Nil
Saskatchewan.....	(i) Emergency (24 hours) and follow-up in accident cases. (ii) Pathological examination of tissue and cancer services. (iii) Clinical and diagnostic specimens provided by provincial laboratories.	Nil
Manitoba.....	(i) Emergency (24 hours). (ii) Minor surgical procedures, including blood transfusions, as designated. (iii) Electro-shock therapy. (iv) Rehabilitation services.	Nil
Ontario.....	(i) Emergency (24 hours) and follow-up in fracture cases. (ii) Certain medical and surgical therapeutic procedures.	Nil
Quebec.....	Nil	Nil
New Brunswick.....	(i) Emergency and follow-up in accident cases. (ii) Rehabilitation services in conjunction with physiotherapy where available. (iii) Diagnostic and treatment procedures, as authorized. (iv) Provincial laboratory services, as specified.	Nil
Nova Scotia.....	(i) Emergency (48 hours). (ii) Medically necessary diagnostic radiological examinations with necessary interpretations. (iii) Specified laboratory examinations. (iv) Radiotherapy for malignancy, and Tumour Clinic Services. (v) Blood, including fractions. (vi) Minor medical and surgical procedures, including electro-convulsive therapy.	Nil

OUT-PATIENT PROVISIONS OF PROVINCIAL HOSPITAL INSURANCE
PROGRAMMES, APRIL, 1962

Province	Services	Authorized Charges
Prince Edward Island.....	(i) Laboratory procedures, as specified. (ii) Radiological procedures, as specified, including use of radioactive isotopes. (iii) Drugs, biologicals and related preparations for emergency diagnosis and treatment. (iv) All other services specified as in-patient services.	Nil
Newfoundland.....	(i) Laboratory and radiological procedures. (ii) Radiotherapy and physiotherapy, where available. (iii) Staff clinical services other than physicians.	Nil
Yukon Territory.....	Emergency.	Nil
Northwest Territories.....	(i) Emergency. (ii) Certain diagnostic procedures, and necessary interpretations.	Nil

* Under provincial programme only.

committees, and the various control measures available to the hospital insurance plans? Are there, on the other hand, patients who do not get the in-patient hospital care they need? In order to determine over-utilization or under-utilization we would have to relate the effective demand to the actual need for hospitalization. Over-utilization may be due to two factors, namely, misuse or lack of alternative facilities. It has become clear that the existence of alternative facilities and arrangements can reduce the pressure for hospital accommodation.¹

Another factor which could tend to decrease the rate of hospitalization is greater care on the part of the physician in admitting patients to hospital and wherever possible discharging patients at the earliest possible time consistent with his responsibilities as a physician. There are two factors besides the lack of home care facilities and out-patient benefits which influence the physician to admit patients who could be cared for elsewhere. The first of these is that the hospital has become the physician's "work shop" in which

¹ See Chapter 8.

he finds the equipment and personnel required to treat his patients. The physician's preference for the hospital is based on its obvious technical advantages, but he may also be influenced by the greater convenience and saving of time which it affords him. Because he has confidence in modern medicine and the modern hospital the patient seldom resists this trend. As part of a recent study undertaken in Michigan by the Governor's Study Commission on Prepaid Hospital and Medical Care Plans an investigation was made of the appropriateness of admission and length of stay.¹ Eighteen diagnoses were selected from a list of the 60 most common diagnoses represented in total discharges from 22 Michigan Hospitals in 1957² with the following results:

"For the 18 diagnoses combined, projections for the state indicated that there were approximately 206,472 days of overstay (6.8 per cent of the actual days consumed) and 70,913 days of understay (2.3 per cent of days of care consumed) during 1958. This means, in total, 277,385 days of ineffective use (9.1 per cent of the estimated number of days of care actually consumed). Again, it should be remembered that this estimate pertains *only* to cases in the 18 selected diagnoses, which represented 46 per cent of cases and 39 per cent of patient days in Michigan general hospitals during 1958."³

"Summarizing the exploration of effectiveness, the overuse found was large enough in volume to represent a major burden to insurance and prepayment. Underuse, while posing a definite threat to adequacy of patient care, did not counterbalance the financial impact of overuse, for in number of days involved it is only one-third as great. The true measure of ineffectiveness is *overuse and underuse combined*. In these terms 16.5 per cent of the cases studied represented ineffective use of the hospital."⁴

An important aspect of this study is that it provides a method for identifying and measuring overuse and underuse of hospital beds. With the present very large and increasing investment in hospital insurance programmes in Canada there is more than sufficient reason for this method to be used in studying the extent of overuse and underuse in Canadian hospitals. This is not to suggest that the findings of the Michigan study would be duplicated in this country. There may well be significant differences in the manner in which physicians in Canada and the United States use hospital facilities, but when this nation of just over 18 million people⁵ is spending nearly \$1 billion a year⁶ on hospital services, and this amount has been steadily increasing, an examination such as that undertaken in the Michigan study is obviously required.

¹ McNerney, Walter J. *et al.*, *Hospital and Medical Economics*, Vol. 1, Chicago: Hospital Research and Educational Trust, 1962, Chap. 26, p. 473.

² *Ibid.*, Chapter 25, p. 457.

³ *Ibid.*, Chapter 26, p. 476.

⁴ *Ibid.*, Chapter 27, p. 499.

⁵ In 1961.

⁶ See Table 11-1.

The other factor influencing the physician to admit patients who could be cared for elsewhere is the lack of a universal, comprehensive prepayment programme for medical services and other services outside the hospital to augment the present hospital insurance programme. The physician and the patient both realize that at least part of the costs of cases which could be treated in the home or at the physician's office will be paid under the hospital insurance programme provided the patient is admitted to hospital. Needless to say, the extent to which this factor influences the hospitalization rate is unknown, but if a comprehensive universal prepaid medical care programme were introduced, there is a strong possibility that it would tend to decrease the rate.

The problem of the large volume of what appears to be, and what we were informed is, unnecessary hospitalization being provided is not new, but it has become a focus of interest since the introduction of the Hospital Insurance and Diagnostic Services Act. As we have noted, in many areas, it arises from a variety of factors, including over-construction of facilities, inadequacy of alternative accommodation, failure to introduce out-patient services as a benefit under the programme, and lack of home care programmes.

From the operation of the Hospital Insurance and Diagnostic Services Act, two other problem areas emerge. The first is the loss of autonomy in the management of their affairs by some hospitals in some provinces. In some cases, the loss is obviously more apparent than real and represents simply the rejection by the hospital insurance agency of unwarranted demands of perhaps an over-ambitious hospital board or administrator. But in other places the loss is real and reflects adversely upon staff performance, patient care, and community support. It is claimed, however, that sometimes decisions are arbitrarily made; there appears to be little consistency in the treatment accorded different hospitals; and recognized standards for staffing and equipping hospitals are either ignored or not up-dated.

The second problem area is the lack of participation by sufficient non-governmental personnel in the formulation of policies, particularly with respect to planning of hospital and other health facilities. The near-absence of representative health planning councils at local, regional, provincial and national levels has led, on the one hand, to duplication and unnecessary expansion, and on the other, to important gaps in facilities and services. It has left, in a sense, a vacuum, which has been filled in the main by government agencies. We believe this to be wrong in principle and unworkable in practice. We believe that with strong local health planning councils, for example, hospitals in some urban centres would cease competing and duplicating, and begin planning a balanced, efficient total community service. The same advantages would begin to emerge at regional

and provincial levels, as indeed, in some instances, they have already done. We believe, also, that such councils could effectively bring hospital associations and the hospital insurance authorities together in the establishment of standard criteria for equipping and staffing hospitals of varying size and differing functions.¹ There should now be sufficient experience for us to remove the element of subjective opinion between a hospital administrator and the hospital insurance authority; for example, whether a given additional nurse or technician is necessary. If there are no objective criteria, then an appeals procedure is clearly necessary.

Despite these problems, which we believe can be resolved, the programme has provided much that is good, and is one of which Canadians can be proud.

The policy in regard to future hospital construction will have to be guided by two basic considerations. The first one is to ensure that sufficient beds are available to meet the need for hospitalization. This has been the guiding principle under the National Health Programme since 1948 when the hospital construction grant was instituted to remedy what was generally agreed to be a shortage of hospital beds. As a result, some 100,000 hospital beds were built in Canada under this programme. There are now some 200,000 hospital beds available in Canada. Under the hospital insurance programme there are few financial barriers to their use by patients, but the same governments largely responsible for the construction of the hospitals must finance their operation, and this has resulted in a growing feeling that we are approaching an optimum supply of beds.² The main problem now is to ensure that it is the need for hospital care, not the availability of hospital beds, that determines the volume of hospital care provided.

The planner is thus faced with the necessity of considering two viewpoints which somehow run counter to each other. Before attempting to reconcile the two, we will indicate how the effective demand for hospitalization is formed. Apart from the exceptional cases of legal commitment to an institution, a patient can be admitted to a hospital only by his attending physician who also determines the date of the discharge.

The physician's responsibility is to some extent shared, but not abrogated, by committees of his peers reviewing admission and discharge practices. These committees, therefore, function as controlling devices where they exist. In determining the need for a patient's admission to hospital and the duration of his stay, the physician is guided by the medical considerations, and also by the adequacy of alternative facilities at the patient's

¹ We deal further with the subject of health planning in Volume II of our Report. *Wm*

² Possibly even above the optimum in some areas while others are still lagging behind.

disposal for treatment or recovery. We must recognize, therefore, that social factors should be taken into account when determining the admission and length of stay of hospital patients. The patient's own conception of his illness, and his assessment of his home conditions and financial problems will sometimes, no doubt, enter into the physician's decision regarding hospitalization.

In view of the physician's key position in determining the effective demand for hospitalization, and in view of his responsibility to limit the demand to what he conceives to be the need, has the administrator any choice in regard to how many hospital beds there should be?

If the hospital and its use could be looked upon in isolation, independently of alternative facilities and changing social patterns, the answer would be simple: the supply of hospital beds would be adequate when existing beds at an acceptable occupancy rate suffice to take care of the demand without unreasonably long waiting lists. If, on the other hand, there is evidence that the demand for hospital beds will not level off no matter how many beds are built, or it will level off at an excessive level only, then one has to seek other means of ensuring an adequate supply of beds without inviting or permitting an excessive usage.

The most obvious and simplest measure of limiting the demand for hospital care is to establish a maximum bed-population ratio beyond which federal or provincial construction grants, or both, would be cut off. The ratio would be based on experience in Canada, and on observations in countries such as the United States or Britain. The difficulty in such an approach is that there is no magic ratio which could be applied to all provinces, territories, or areas within their boundaries. We cannot say that a ratio found to be satisfactory in Ontario, for example, should equally apply in Newfoundland or the Northwest Territories. If one accepted as the norm the highest ratio now found in any of the provinces, it would encourage the construction of unnecessary beds in some areas. If, on the other hand, one chose a lower ratio, areas with greater need would be penalized, or one would have to permit exceptions which would defeat the purpose of a general norm and lead back to the need for intensive studies of hospital requirements in specific areas. Such studies will in any case remain an unescapable requirement.

In addition, the hospital and its use can no longer be evaluated without considering the other community services. Nor can the administration of the Hospital Construction Grant Programme and of the Hospital Insurance and Diagnostic Services Act ignore developments outside these programmes.

Limiting the bed ratio to some acceptable value may, therefore, be an expedient and effective means of curbing excessive hospital construction

and operating expenditures, but it remains a stop-gap measure only. By itself, it will not ensure the adequacy of hospital facilities on the one hand, nor guard effectively against excessive use on the other. In order to achieve an adequate level of hospital care, the limitation of new construction to a given ratio must be accompanied by other measures of determining bed requirements.

Such measures include planning, based on systematic surveys, which would subordinate local interest, and perhaps pressure, to regional or provincial plans, thereby ensuring the greatest possible effectiveness of service combined with efficient use of facilities and personnel.¹ Prepayment coverage of services outside the hospital will have to be considered together with a strengthening of these services, particularly in the form of organized home care schemes. Home care plans will not only provide some of the medical, nursing, and paramedical services outside the hospital, but they will also affect the patient's social environment which we have identified as a frequent reason for stay in hospital in preference to treatment and recovery at home. The provision of nursing homes will serve a similar purpose in many cases once the question of their financing has been solved in the context of health services in general. The strengthening of hospital out-patient departments will be another factor in relieving the pressure.

The attending physician has been identified as the decisive factor in determining the demand for in-hospital care, and he will remain largely instrumental for the future pattern of hospital utilization. Group practice may have some effect in decreasing hospital utilization, but the physician must have at his disposal an effective home care programme and an out-patient programme. The various forms of admission-discharge committees must be used to a greater extent in the future, and they too must be fully aware of social indications leading to hospitalization and the alternative services available.

Tuberculosis Sanatoria

As we have described earlier in Chapter 5 and as is evident from Table 14-2 the utilization of tuberculosis hospitals has been declining steadily. Between 1957 and 1961, days of care per 1,000 persons provided in these hospitals fell by over 40 per cent from 234 to 127, this in a

¹ Regional and province-wide planning will mean that hospitals will become institutions designed to serve a region or entire province rather than merely the local community. While this will increase efficiency and quality of care, it will lift individual institutions out of the local context on which their financing has traditionally been based. One can no longer expect municipalities or voluntary agencies to raise as much as three-quarters of the construction costs if the hospital becomes part of a provincial master plan instead of being the result of local initiative.

four-year period. We have projected that this decline will continue, partly through a reduction in the length of stay and partly through a transfer of tuberculosis treatment from sanatoria to public general hospitals.¹ Our projection assumes a slowing down in the rate of decline of patients in sanatoria, but it assumes that days of care in these hospitals will fall from 127 per 1,000 persons in 1961 to 55 days per 1,000 persons in 1971.

It should be emphasized that despite the projected decline in this type of hospitalization, tuberculosis still remains a major health problem.² Nearly one and a quarter million days of hospital care are estimated for 1971, and this excludes hospital care given in tuberculosis units.

Mental Hospitals

We have presented two estimates of mental hospital care; one assuming continuation of the changes now taking place in the care of the mentally ill and a second assuming a more rapid change based on the implementation of the recommendations we have made.

The projection based on the continuation of existing trends is shown in Table 14-2. Between 1957 and 1961, days of care per 1,000 persons provided in mental hospitals and homes for the mentally retarded declined from 1,417 to 1,356 or 61 days in a four-year period. We have projected that this decrease will continue and that by 1971, ten years later, the figure will be 1,315, a further drop of about 50 days. These figures do not include psychiatric care provided in general hospitals which has been included in the projection of general hospital care. It is based, however, on the assumption that the development of this type of care will not proceed any faster than it did in the decade 1951-1961. Total days of care are projected to grow between 1961 and 1971 from 24.74 million to 29.71 million—an increase generated solely by population growth.

Carrying further our review of possible new developments in the field of hospital care for psychiatric disorders, we have compiled Table 14-3. It is based on estimated changes in the treatment pattern stemming from our recommendations, should a decisive step be taken during the period 1961-1971 towards the re-orientation of mental health services.³ In this table the figures for the base year 1961 reflect the actual situation in that year. The combined figure of days of care per 1,000 persons in mental hospitals, 1,105, and institutions for the mentally retarded, 251, is the same, 1,356, as shown for mental hospital care in 1961 in Table 14-2.

¹ The mean hospital stay of tuberculous discharges in 1961 was 241 days compared with 362 days in 1955. Dominion Bureau of Statistics, *Tuberculosis Statistics 1961*, Ottawa: Queen's Printer, 1963, p. 49.

² See Chapter 5.

³ This re-orientation is further discussed in Chapter 8.

In the years 1966 and 1971 the days of care per 1,000 persons in mental hospitals and institutions for the mentally retarded would be:

	With Existing Programme ¹	With Expanded Programme ²
1961	1,356	1,356
1966	1,340	1,105
1971	1,315	917

The result of the programme would thus be a substantial reduction in the patient-day rate despite a projected 48 per cent increase in the rate for the mentally retarded. While the total volume of all days in mental hospitals would decrease from 1961 to 1971 by 7.84 million days, that in institutions for the retarded would grow by 3.82 million during the same period.³ The most rapid increase in the patient-day rate is foreseen for the psychiatric units in general hospitals: a fivefold increase in the rate, resulting in 2.9 million more patient-days in these units.

All these projections imply, of course, assumptions regarding the speed and extent of implementation of the new programme within the period under consideration, but as we have emphasized earlier, the care of the mentally ill is one of the major health problems of our time and, we believe our appraisal of the need is a realistic one. Table 14-3 summarizes the results of the envisaged psychiatric care programme in terms of the demand for days of hospital care of the three broad types⁴ as well as the total for all hospitals. The difference between a continuation of the mental care programme as it is now and an expanded programme is as follows:

DAYS OF CARE

Year	Existing Programme*		Expanded Programme**	
	Total Days	Days per 1,000 Persons	Total Days	Days per 1,000 Persons
	(millions)		(millions)	
1961.....	24.74	1,356	24.74	1,356
1966.....	27.20	1,340	23.38	1,151
1971.....	29.71	1,315	23.62	1,045

*See Table 14-2.

**See Table 14-4.

¹ See Table 14-2.

² See Table 14-3.

³ Institutions for the mentally retarded include residential schools for training and rehabilitation as well as institutions for custodial care.

⁴ Note that the *extra* days in psychiatric units due to such a programme are included in Table 14-4 under "Hospital Care for the Mentally Ill".

If the intensive care programmes produce the results that they appear to be able to, the population of the large custodial mental institutions could well be eliminated in the decade of the nineteen seventies.

All Hospital Care

Our projections of total hospital care with and without an expanded mental health care programme is as follows:

DAYS OF ALL HOSPITAL CARE

Year	Existing Programme*		Expanded Programme**	
	Total Days	Days per 1,000 Persons	Total Days	Days per 1,000 Persons
	(millions)		(millions)	
1961.....	65.71	3,606	65.71	3,606
1966.....	72.31	3,562	68.49	3,373
1971.....	79.79	3,532	73.70	3,262

*See Table 14-2.

**See Table 14-4.

Assuming existing programmes, we project that total days of care will rise to 80 million from 65.7 million in 1961. This increase is all due to population increase as we project days of care per 1,000 persons will decline to 3,532. Thus over the decade, the decrease is 75 days compared with a decrease of 100 days in the four-year period 1957-61.

With the introduction of an expanded mental health care programme total days of care are projected to decline to 3,262 days per 1,000. It would, therefore, result in the following estimated reduction in hospital-days per year:

	<i>Total Days</i>	<i>Days per 1,000 Persons</i>
	(millions)	
1961.....	—	—
1966.....	3.82	189
1971.....	6.09	270

TABLE 14-3 ESTIMATED BEDS SET UP, PATIENTS AND PATIENT-DAYS IN HOSPITALS FOR THE MENTALLY ILL, ASSUMING AN EXPANSION OF PUBLIC PROGRAMMES, BY CLASS OF HOSPITAL, CANADA, SELECTED YEARS, 1961-1971

Year	Psychiatric Units in General Hospitals*					Mental Hospitals				
	Beds Set Up	Beds per 1,000 Persons	Average Number of Patients	Patient-Days	Days of Care per 1,000 Persons	Beds Set Up	Beds per 1,000 Persons	Average Number of Patients	Patient-Days	Days of Care per 1,000 Persons
1961**	1,800	.10	1,110	.40	22	55,232	3.03	55,232	20.16	1,105
1966†	4,100	.20	3,485	1.35	66	45,000	2.20	45,000	16.43	809
1971†	10,600	.47	9,010	3.30	146	33,750	1.50	33,750	12.32	545
	Institutions for the Mentally Retarded					All Mental Institutions				
1961**	13,370	0.73	12,548	4.58	251	70,402	3.86	68,890	25.14	1,378
1966†	16,440	0.81	16,440	6.00	296	65,540	3.21	64,925	23.78	1,171
1971†	23,000	1.02	23,000	8.40	372	67,350	2.99	65,760	24.02	1,063

*Excludes psychiatric care provided in federal hospitals. Estimated to be 465,000 days in 1961.

**Based on Dominion Bureau of Statistics, *Mental Health Statistics 1961*, Ottawa: Queen's Printer, 1963, p. 30, and Department of National Health and Welfare, *op. cit.*

†Projected.

SOURCE: Madden, J.J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 14-4 ESTIMATED DAYS OF HOSPITAL CARE PER 1,000 PERSONS AND TOTAL DAYS OF CARE, ASSUMING EXPANSION OF PUBLIC PROGRAMMES FOR THE MENTALLY ILL, BY CLASS OF HOSPITAL, CANADA, SELECTED YEARS, 1961-1971

Year	General and Allied Special Hospital Care*		Tuberculosis Hospital Care		Hospital Care for the Mentally Ill**		All Hospital Care	
	Total Days	Days of Care per 1,000 Persons	Total Days	Days of Care per 1,000 Persons	Total Days of Care	Days of Care per 1,000 Persons	Total Days of Care	Days of Care per 1,000 Persons
1961.....	'000,000		'000,000		'000,000		'000,000	
1966†.....	38.65	2,124	2.32	127	24.74	1,356	65.71	3,606
1971†.....	43.28	2,132	1.83	90	23.38	1,151	68.49	3,373
	48.84	2,162	1.24	55	23.62	1,045	73.70	3,262

*Includes psychiatric care provided in federal hospitals and in psychiatric units existing in 1961.

**Includes psychiatric care provided in general hospitals as a consequence of the introduction of an accelerated programme transferring care for the mentally ill from mental hospitals to general hospitals.

†Projected.

SOURCE: Tables 14-2 and 14-3.

BED NEEDS

We are equally concerned with the outlook regarding the expected need for the physical facilities to provide the required care, and also the capital cost involved in providing these facilities. It will, in fact, be the existence and availability of beds which will ultimately determine the extent of utilization of hospitals. We, therefore, discuss the implications of the above projection of hospital utilization for the supply of beds to 1971.

The number of hospital beds required will depend upon two factors, the number of days of hospital care and the average occupancy rates of such beds. With respect to occupancy rates in mental institutions, institutions for the mentally retarded and tuberculosis sanatoria we have assumed an occupancy rate of beds set up of 100 per cent which is likely to be closely approached when the cases responding to treatment in a general hospital or other community facility have been separated. We have assumed a slight increase in the occupancy rate in general and allied special hospitals, from 80.0 per cent in 1961 to 81.6 per cent in 1971, an increase which in our opinion can be achieved and should be aimed at. We assume little over-all changes in the occupancy rate of bassinets.

The number of beds for the treatment of all classes of hospital patients in 1961 as shown in Table 14-5 has been estimated at 196,812 or 10.79 beds per 1,000 persons of which 68,602 were in mental institutions caring for the mentally ill or retarded and 5,972 in tuberculosis hospitals providing hospital care for those ill with tuberculosis. The remaining 122,238 beds were in public general, private and federal hospitals or in chronic and psychiatric units in tuberculosis hospitals where care was provided for a wide variety of short-stay and long-stay patients. About 1,800 beds were available in psychiatric units of general hospitals and these are included with beds in public general hospitals.

In view of the decline projected for treatment in tuberculosis hospitals no additional beds or replacement beds are projected for this area. The same is true for large-scale institutions for the care of the mentally ill since the existing trend in patient care in such institutions is declining. We have, therefore, projected no net additions to the stock of this capital and no replacement of beds in older institutions. Given the age and condition of many patients in mental hospitals, even by the end of the decade, there still will be a sizeable number of patients in such institutions. This number should fall gradually through the nineteen seventies as intensive treatment and rehabilitation programmes are developed.

Corresponding to the decline in long-stay beds in mental institutions is the expansion of the number of beds in, or associated with, general hospitals. No attempt has been made to classify these beds according to whether they would be in units in a general hospital or in small psychiatric hospitals associated with general hospitals, but in the case of the former the projection is consistent with the growth of the number of hospitals capable of operating a psychiatric unit. Indeed the problems associated with the staffing of such units and the availability of hospitals of the appropriate size has led us to project an increase of 1,000 beds a year in 1965 and 1966, and 1,300 beds a year thereafter, which would yield 4,100 beds by 1966 and 10,600 beds by 1971. This would increase the number of beds per 1,000 persons from .10 to .47 over the decade, a ratio somewhat below that thought desirable,¹ but realistic in the perspective of the general hospital construction programme and the difficulties associated with any speeded-up programme.

The number of beds needed in institutions for the mentally retarded is estimated to increase from 13,370 to 23,000 between 1961 and 1971. This increase is partly due to the transfer of mentally retarded patients from mental institutions, but is also based on our recommendation concerning the institutional care of these patients.² We have, therefore, projected that the number of beds in institutions for the mentally retarded will rise from 13,370 in 1961 to 23,000 in 1971, an increase in the ratio of beds per 1,000 persons from 0.73 to 1.02. Whether this will be sufficient to meet the needs of the population is uncertain and the ratio may well increase in the nineteen seventies.³

The total number of beds for the treatment of the mentally ill and retarded is, therefore, projected to decline from 70,402 in 1961 to 67,350 in 1971, a decline in the bed-population ratio from 3.86 to 2.99 beds per 1,000 persons. The fall in the number of beds in large mental institutions is offset to some extent by the increased number of beds in active treatment institutions but the expansion of the latter ultimately will lead to a decline in the total number of patients permanently hospitalized.

The rest of our projection of hospital beds assumes that the transition from segregated hospital care in mental or tuberculosis hospitals will take

¹ Richman, A., *Psychiatric Care in Canada: Extent and Results*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964. There, a ratio of 0.7 beds per 1,000 population is quoted as required accommodation for intensive treatment, based on the experience in Saskatchewan. In the Moose Jaw area, ratio of beds in the psychiatric unit was less than 0.4 beds per 1,000 population, but it is emphasized that "the above-mentioned ratios can be markedly affected by the development and expansion of community alternatives to in-patient care", a proviso which we have applied generally to our projections.

² See Chapter 2, Recommendations 9-12.

³ The corresponding requirement for England and Wales has been estimated at 1.8 beds per 1,000 population, a figure which by some is considered to be too high. See Richman, A., *Psychiatric Care in Canada: Extent and Results*, *op. cit.*, Chapter 5.

place gradually over the near future and Table 14-5 is based on this assumption. In consequence, what we are projecting is the supply of beds assuming the expansion of public programmes to care for the mentally ill and retarded.

Leaving aside for the moment the need for psychiatric beds in general hospitals, we have projected that the number of beds in general and allied special hospitals will have to rise from 120,438 in 1961 to 151,350 in 1971 in order to meet the need for hospital care projected above.¹

The number of beds required as a consequence of a more rapid integration of mental hospital care with general hospital care is shown in Table 14-3. The general decline in beds set-up in mental hospitals we have already referred to.²

In Table 14-5 the projection of the total number of beds is set out. In 1961 there were 196,812 beds, a ratio of 10.79 beds per 1,000 persons. By 1971 the total number of beds is projected to rise to 222,097 but the ratio to fall to 9.84 beds per 1,000 persons. The composition of hospital care is changed however, since the number of beds in general and allied special hospitals, including beds in psychiatric units or hospitals, grows more rapidly than the population, while the supply of beds in tuberculosis sanatoria declines. But even in general and allied special hospitals, the bed-population ratio does not increase significantly since in 1961 it amounted to 6.7 beds per 1,000; in 1966 to 6.87; and in 1971 to 7.17—an increase almost entirely due to the expansion of psychiatric hospital care.

Estimated New Hospital Construction, 1966 and 1971

As a basis for our projections regarding the expected capital costs of hospital construction we have in Table 14-6 prepared estimates of the additional beds and bassinets, and the replacement of obsolete beds and bassinets that will be required based on the assumptions in the foregoing tables.

In an industry where the life of the capital stock is, on the average, at least fifty years and where competitive activity is not of the type to eliminate technologically obsolete capital equipment, the projection of obsolescence rates over a period as short as a decade is particularly difficult. This is all the more so in that a very high proportion of hospital facilities has been built in recent years, particularly since the inception of the National Health Grants Programme. The large stock of new capital would indicate a very

¹ Some of these beds may still remain in tuberculosis sanatoria that have been converted but they are included in general hospitals for the purpose of projection.

² In view of the difficulty of projecting the supply of beds in psychiatric units and mental hospitals if our recommendations were not carried out, and considering the need for psychiatric units, we have assumed that these units will be built and in consequence, we have not prepared an estimate of bed needs on the basis of a continuation of existing trends. The projection of hospital beds assuming existing programmes and an expanded programme are the same.

TABLE 14-5 ESTIMATED STOCK OF HOSPITAL BEDS, BEDS PER 1,000 PERSONS AND OCCUPANCY RATES,
BY CLASS OF HOSPITAL, CANADA, SELECTED YEARS, 1961-1971*

Year	General and Allied Special Hospital Beds and Bassinets**					Tuberculosis Hospitals		Mental Hospitals and Institutions for the Mentally Retarded†		All Hospitals††	
	Number of Hospital Beds and Cribs	Beds per 1,000 Persons	Occupancy Rate	Number of Bassinets	Occupancy Rate of Bassinets	Number of Beds	Beds per 1,000 Persons	Number of Beds	Beds per 1,000 Persons	Number of Beds	Beds per 1,000 Persons
1961 ^a	122,238	6.70	80.0	15,500	52.0	5,972	.33	68,602	3.76	196,812	10.79
1963 ^b	128,800	6.70	80.0	16,000	53.0						
1966 ^b	139,350	6.87	81.1	16,800	54.0	5,014	.25	61,440	3.01	205,804	10.13
1971 ^b	161,950	7.17	81.6	19,900	52.0	3,397	.15	56,750	2.52	222,097	9.84

* Assumes expanded programme of psychiatric treatment in general hospitals as indicated in Table 14-3. Excludes beds in mental institutions and tuberculosis hospitals left vacant by transfer of this type of hospital care to general hospitals.

** Includes beds located in psychiatric units of general hospitals as shown in Table 14-3 as well as chronic and psychiatric beds in tuberculosis sanatoria, includes public, private and federal hospitals and both short-stay and long-stay hospitals.

† Excludes beds located in psychiatric units of general hospitals as shown in Table 14-3.

†† Excludes bassinets.

^a Estimated.

^b Projected.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 14-6 ESTIMATED NEW HOSPITAL CONSTRUCTION, CANADA, SELECTED YEARS, 1966 AND 1971

Year	Estimated New Construction Required Each Year in General and Allied Special Hospitals*						
	Beds and Cribes			Bassinets			Additional Beds Required in Residential Institutions and Training Schools**
	Additional Beds in General Hospitals**	Replacement Beds in General Hospitals†	Additional Psychiatric Beds	Total Beds	Additional Bassinets in General Hospitals**	Replacement Bassinets in General Hospitals††	Total Bassinets
1966 ^b	3,300	2,025	1,300	6,625	400	170	570
1971 ^b	3,300	2,270	1,300	6,870	600	200	800

*Includes addition of beds and bassinets in general and allied special hospitals of all types; public and private active treatment, chronic and convalescent beds as well as federal hospital beds. Projected on the basis of Table 14-5.

**Projected on the basis of Table 14-3.

†Projected at a rate of 1.5 per cent a year.

††Projected at a rate of 1.0 per cent a year.

^bProjected.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

low actual rate of replacement although scientific and technical change in the practice of medicine, along with population shifts, indicate a closing down of some small rural hospitals that have been built in recent years. Our projection therefore is based on a rate of obsolescence of 1.5 per cent a year in the case of beds and cribs and 1.0 per cent a year in the case of bassinets in general and allied special hospitals. To the extent that this obsolescence takes place in lightly populated areas, it permits the growth of the number of hospital beds in areas where the population is growing more rapidly to expand at a faster rate than the national average. Finally, we have not projected any replacement beds in mental or tuberculosis hospitals so obsolescence rates are irrelevant.

Given that the changes we recommend take place over the decade 1961-1971 the additional beds needed each year to meet the growth of hospital care in general and allied special hospitals should rise to 6,625 in 1966 and 6,870 in 1971, while the annual increment of bassinets should rise to 570 in 1966 and 800 in 1971. The annual increment of beds in residential institutions and training schools for the mentally retarded should rise to 1,000 in 1966 and to 1,500 in 1971.

CONCLUSION

In conclusion, we must emphasize again that the numerical projections, subject as they are to numerous assumptions, can serve only to indicate the general order of magnitude of the need for physical facilities for the period to which they apply. The validity of these assumptions should be reviewed periodically in order to adjust the projections in the light of new developments.

Regional planning will assume an increasing role in the years to come but regionalization as such will not affect the supply or demand situation in regard to hospital beds in a large area. It will make for better and more effective care, and also bring about a shift with regard to the type and location of beds. The Saskatchewan Hospital Survey¹ recommends the gradual closure over a ten-year period of 18 "limited function" hospitals.² This is an inevitable evolution, in Saskatchewan as well as elsewhere, and one which indicates the need for local participation in the aforementioned councils if hospitals are to retain some of their autonomy. There is no suggestion that the hospitals to be closed should not have been

¹ *Summary of Saskatchewan Hospital Survey and Master Plan 1961, Part I, A Report of the Hospital Survey Committee, Health Services Planning Commission, Saskatchewan Department of Public Health, Regina: February 1963.*

² *Ibid.*, p. 49.

built in the first place. The small community hospital at one time was a very desirable and necessary part of our health services and no doubt contributed much to the settlement of certain rural areas. It is becoming obsolete, however, with the "development and improvement of the highway and grid road systems; the rural-urban population movement; the development of larger, more centralized, trading centres; the economic factors influencing farming practices; and the changing pattern of medical practice".¹

In the years under review the stock of hospital facilities will continue to grow. This appears unavoidable in the face of an increasing population. Some construction is also needed, of course, to counteract the ever present obsolescence of existing institutions. We assume, however, that the increase in hospital facilities will occur at a *considerably reduced rate* from what it has been in recent years and for the nation as a whole, the provision of hospital beds can be expected to approach a fairly stable situation, after fifteen years of operation of the National Health Grants Programme and five years of national hospital insurance, whereby the supply of beds grows at the same trend rate as population growth.

Within this over-all stability of the supply of beds, significant changes in the provision of hospital care can be expected. Changes will result from the anticipated greater integration of tuberculosis and mental health care into the general health services: both tuberculosis and mental institutions will decline in significance, with a substantial part of their remaining functions being shifted to the general hospital. There will be a growing pressure for re-appraising the organization within the general hospital in the light of new principles such as progressive patient care, and the division between acute treatment and institutions providing chronic and convalescent care, including the nursing home. The increasing emphasis on rehabilitation will also bring about changes within the general hospital as well as in its relationship to the community.

The Commission has recognized these latter changes and has recommended the development of community facilities and services outside the hospital as a supplement to and a quality substitute for a proportion of hospital care.² Thus the slowing down in the rate of growth of hospital construction will be offset, to some extent, by the expansion of community health facilities.

The removal of certain types of care from the hospital by the envisaged mental health programme, home care, and rehabilitation services outside the hospital, will call for the provision of alternative facilities in the community. This will in part require a certain amount of capital expenditure for new buildings but use may be made, to some extent at

¹ *Ibid.*, p. 48.

² See Chapter 15.

least, of some of the facilities vacated by the reduced demand for tuberculosis and mental hospital beds in existing institutions. To a large extent, any shift away from the hospital as a result of the programmes mentioned will mean additional demands for personnel to staff these newly emerging services in the community. The improved quality of care carries with it a cost in the provision of more specialist personnel and facilities which offsets the reduced need for more traditional forms of hospital capital.

A summary of the projected increases in hospital beds appears below:

Item	1961		1966		1971	
	Number of Beds	Beds per 1,000 Population	Number of Beds	Beds per 1,000 Population	Number of Beds	Beds per 1,000 Population
<i>1. Stocks of Beds and Bassinets*</i>						
All hospitals (beds).....	196,812	10.79	205,804	10.13	222,097	9.84
General and allied special hospital beds.....	122,238	6.70	139,350	6.87	161,950	7.17
(bassinets).....	(15,500)	—	(16,800)	—	(19,900)	—
Tuberculosis hospitals.....	5,972	.33	5,014	.25	3,397	.15
Mental hospitals and institutions for the mentally retarded	68,602	3.76	61,440	3.01	56,750	2.52
<i>2. New Construction Required Annually**</i>						
General and allied special hospitals.....	—	—	6,625	—	6,870	—
Beds for mentally retarded.....	—	—	1,000	—	1,500	—
Bassinets.....	—	—	570	—	800	—

*Source: Table 14-5.

**Source: Table 14-6.

Over the period 1961-1971, the net addition to the stock of hospital beds, because of the projected substantial reduction of beds now located in mental and tuberculosis institutions, is less than one-third of the percentage increase in the number of beds in the previous decade. It is still projected to increase by 25,300 in the case of beds and cribs and 4,400 in the case of bassinets. If the projected increase in beds in institutions for the mentally retarded are included, the total addition in beds and bassinets projected between 1961 and 1971 amounts to about 39,000 or almost 20 per cent of the stock existing in 1961.

If the beds projected to replace obsolescent beds in public general and active treatment hospitals are included in this amount, between 1961 and 1971 the total gross increment of beds and cribs and bassinets is estimated to approach 61,000. Population growth and adjustment to the redistribution of population, along with improved quality in health care carry with them a continuing high level of construction of hospital facilities. The cost of such facilities are projected in Chapter 20.

Home Care and Rehabilitation

The provision of health services on a comprehensive basis rests on four major factors: personnel, capital, scientific and technological know-how resulting from research, and organization. We have dealt with health personnel and facilities in Chapters 7, 8, 13, and 14 of this volume. Research and matters of organization are dealt with in Volume II. There are, however, two areas which we would like to single out for special consideration because they cut across the four factors mentioned and are of the utmost importance for the co-ordination of the recommended comprehensive Health Services Programme. These two items are: organized home care and rehabilitation.

The provision of adequate home care services has become a matter of great importance for the twofold reasons of better care for the sick and, at the same time, more economic services where they can substitute for or supplement hospital care. Concerning the respective economics of care in the home or the hospital, we have strong indications that the operation of an organized home care plan, providing a good standard of service, is considerably less expensive than the corresponding care in hospital for the certain types of patients and certain illnesses or stages of illness for which home care is suitable.

Rehabilitation, the second subject to be reviewed in this chapter, is a problem on an entirely different plane from that of home care. While the latter refers to a specific type of organization, rehabilitation is a principle underlying a varying range of services. Its implementation, however, raises major administrative and organizational problems. Rehabilitation in physical as well as mental illness requires the earliest possible return of hospital patients to the community. Thus, there is a close link between the implementation of home care plans, and an increasing emphasis on the principles of rehabilitation.

ORGANIZED HOME CARE

In Chapters 3 and 6 we refer to the changes that have taken place in people's attitude towards the hospital; not only its growing acceptance but also the increasing demand for its services when diagnosis and care of any consequence are involved. We also observe that at the same time the

home has become a less suitable place for accommodating the sick as urbanization and the type of modern housing have altered living conditions and broken up the pool of relatives and neighbours from which attendants for the sick could usually be drawn.

Thus there was a tendency to look upon the hospital as the natural place to go when sick, until some second thoughts developed. There can be no doubt that with the rapid progress in medical science and technology the hospital is the only place where adequate and up-to-date diagnostic and treatment facilities for a great number of conditions are available. The same applies to the medical restoration phase of the rehabilitation process. But more and more emphasis is being placed now on the need for judiciously examining whether an actual need for hospitalization exists in a particular case.

In many cases need may be exaggerated, leading to over-utilization of hospital facilities and contributing to shortages and pressure for additional hospital construction. Not enough consideration has been given to alternatives, particularly the increased use of home care services and out-patient facilities.

Why is this so? The answer is provided by the structure of the modern health services complex.¹ The hospital has become the repository of much of the modern diagnostic treatment and rehabilitation facilities and equipment. Hence its attraction for the physician and patient alike, although an increasing range of specific services such as visiting nursing, physiotherapy, medical social work, and others are available now in the community outside the hospital. But whereas all the necessary ancillary services are brought to bear on the case by the institution once a person is admitted as an in-patient to the hospital, there has been no corresponding organization before the advent of organized home care plans to co-ordinate similar services outside the hospital.

Thus, one of the prerequisites for restoring home care to its proper place is the development and organization of the necessary community services outside the hospital, so that the physician can refer patients requiring a variety of services to the home care plan just as he refers them to the hospital when they need hospital care. We must realize that home care plans of themselves will not necessarily mean that they will be fully utilized. They must have the confidence of patients and physicians. Too often physicians are indifferent to such plans and do not support them. After reviewing home care plans in Canada and the United States, Dr. Genesove concludes that "the biggest single failing in each programme was the failure to enlist the support, develop the interest, and utilize the skill of the average neigh-

¹ See Chapters 7 and 8.

bourhood doctor".¹ One important factor in promoting the acceptance of home care by the physician, the patient and his family is the assurance that the patient can be readily admitted or readmitted to a hospital, should the need arise.

As long as the cost of hospitalization is covered by the insurance plan, but the patient is expected to pay for services such as home care received outside the hospital, there is an incentive to use the hospital even where adequate care can be provided outside. This anomaly in our present system of health services will be eliminated by implementation of our recommendations regarding the organization of home care programmes and their financing, as well as by the recommended full coverage of out-patient services under the Hospital Insurance and Diagnostic Services scheme.²

Sufficient experience has been gained in Canada over more than fifteen years with the operation of home care plans in a great variety of settings,³ to warrant now the general implementation of such plans. The National Health Grants Programme has encouraged the development of home care plans but, by its very nature, favoured diversity rather than co-ordinated development. This was justified and necessary to evaluate the operation of various types of plans. We are convinced that the stage has now been reached where, on the one hand, it has become imperative to supplement the services provided under the Hospital Insurance and Diagnostic Services Act, and where, on the other hand, the implementation of organized home care plans has become feasible. Great care will have to be taken in the planning and administration of home care plans that they not be looked upon merely as less costly substitutes for hospitalization. There must be close co-ordination between the home care plan and the hospital, the choice at a particular stage being determined by the needs of the patient.

The haphazard development of home care plans has meant, in many cases, certain limitations on the type of patients admitted to the plan, beyond the purely medical and social criteria which establish whether a particular patient could benefit from home care services. Among the extraneous criteria is the capacity of the plan in terms of finances and personnel. But these apply generally without selecting certain types of patients except perhaps according to the severity or urgency of the case. We also find that some plans are limited, for instance, to patients discharged from a certain hospital, to certain conditions (such as psychiatric), or to indigents. This is natural

¹ The Moose Jaw Community Home Care Program, Moose Jaw, Saskatchewan, *First Annual Report*, April 1st, 1962-March 31st, 1963, p. 6. The Moose Jaw Community Home Care Programme, however, represents a notable exception in this regard because the programme was established at the initiative of the Moose Jaw and District Medical Society.

² See Chapter 2, Recommendations 105-107, 120 and 121.

³ See Kohn, R., *Emerging Patterns in Health Care*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.]

as long as the establishment of home care plans has to wait for local initiative often taken to meet a specific problem. The selectiveness characterizing some of the existing plans will disappear, however, when plans become established as an essential community service.

Services Provided by Home Care

As with other health services, the physician remains the hub for the services provided under a home care programme. He directs all health services brought to bear on the case and his judgment is an important factor in the employment of other community services. The medical criteria he sets for the admission and discharge of home care patients are supplemented by the social conditions of the patient as determined by the medical social worker or the nurse.

Professional nursing is another essential service. The services of the full-time private duty nurse in the home are infrequent because of the cost, the scarcity of nurses, and the fact that cases requiring this type of nursing usually also require active treatment in the hospital. Thus, most cases requiring continuous nursing supervision will be cared for in an institution, leaving the bulk of nursing under a home care programme to the visiting nurse. Home nursing and visiting nursing mean that the nurse goes to the home only long enough to discharge a certain function such as applying a treatment or giving health instruction to the patient or members of his household regarding the management of the case. Where other community services are not developed, the visiting nurse often performs some of the tasks of the social worker, physiotherapist, and if necessary of the homemaker. Even before the advent of formal home care programmes she called in other community services where needed and available. Because of this background and experience, nurses are often found as the administrators or co-ordinators of home care programmes.¹

¹ The institution of visiting nursing deserves much more attention than it has been receiving in the past. Largely perhaps because the service was provided generally by voluntary organizations, it has always been looked upon as something akin to charity rather than an essential part of health services. Suddenly, with the advent of home care programmes, we discovered that we really had its most essential component available all along if only we had used it adequately. Here also is a service which, besides the care for the sick, always emphasized the positive and preventive aspects of health care, particularly in regard to prenatal and postnatal maternity care and health education. The nurses have kept abreast with modern developments in these fields and also with the new approach towards rehabilitation, both physical and psychiatric. Thus visiting nursing seems to emerge as a discipline of its own distinct from hospital, traditional public health, or industrial nursing. By public health nursing we mean services provided by public health departments which usually do not include bedside nursing. Most visiting nurses now have public health training. What sets them apart is not so much their training as their function and responsibility. Much like public health nurses in remote areas, the visiting nurse combines the functions of the hospital nurse and the public health nurse but has to work more independently and thus requires more initiative and resourcefulness, such as found in voluntary organizations like the Victorian Order of Nurses for Canada, established in 1897, the Saint Elizabeth Visiting Nurses Association, founded in 1908, and the Société des Infirmières Visiteuses formed in 1937. Public health nurses now do provide home nursing in many areas of British Columbia and, to a lesser extent, in other provinces.

The physician and a visiting nursing service form a home care plan, with the latter service providing the organizational nucleus. As indicated already, the nurse sometimes also takes on the role of the social worker in assessing the suitability of the household for home care, and she also establishes contact with other community services required in the case. This contact may be made on a more or less personal basis without any formal liaison arrangements. This, together with the fact that no new organization is required if only the physician and the nursing service are involved, provides the essentials of a home care plan though not of the formal nature of what has become recognized as an organized home care programme.

A formal home care programme must have an organization, either voluntary or public, whose responsibility it is to co-ordinate the work of the several agencies providing services under the plan.¹ These should include all the professional and technical assistance available at the hospital (except those specifically limited to active treatment which can be given only to hospital in-patients) plus any services required to improve where necessary the patient's home conditions so that the health services can be provided in the home in a satisfactory setting. In other words, home care must be able to provide both the health services proper and such services as home-maker, meals-on-wheels, social welfare and friendly visitors needed to provide the adequate environment for the effective functioning of health services.² Obviously the range of services available will largely influence the choice of patients that can be covered by a particular home care programme. The cost of the programme will be affected by the type of services available and the extent to which they are used. The kind of services a home care plan has to provide will also depend on the extent to which diagnostic and treatment services are available in a hospital out-patient department or rehabilitation centre, and can be used by patients going there or taken there by ambulance or taxi. Depending on the relationship between the programme and the hospital, X-ray or laboratory procedure may be considered part of the home care programme. Table 15-1 shows the services provided by selected home care plans in Canada.³ While the range varies—not only from plan to plan but also under the same plan over a period of time—the following services are required components: nursing as a basic service, social case work, homemaking or housekeeping, physiotherapy, occupational therapy, and transportation (ambulance or taxi). We find

¹ See also *Report of the Conference on Organized Home Care, Chronic Disease Program, U.S. Public Health Service*, held in Roanoke, Va., June 9-13, 1958, p. 7; and *Commission on Chronic Illness, Care of the Long-Term Patient*, Chronic Illness in the United States, Volume II, Harvard University Press, Cambridge, Mass., 1956, p. 587.

² Dale, B. T., and Mumby, D. M., *A Study of Home Care Needs in Wellington County*, The Wellington County Board of Health, Fergus, Ontario, 1961, p. 5.

³ The comparability of the data is affected by the aforementioned varying approach to hospital X-ray and laboratory services. Also, some plans specify certain services while others may lump them together under a general heading such as "social services" (e.g., service clubs sometimes provide appliances, drugs, or other services).

TABLE 15-1 SERVICES PROVIDED BY SELECTED HOME CARE PROGRAMMES IN CANADA
(in addition to physicians' services)

Type of Service†	Moose Jaw Community Home Care Programme	Pilot Home Care Programme, Toronto	Home Care Medical Programme, Winnipeg General Hospital	Home Care Service, Greater Victoria, Metro- politan Board of Health	Home Care Section, Herbert Reddy Memorial Hospital	Service de soins à domicile, hôpital Ste. Jeanne D'Arc, Montréal	Projet d'un service de soins organisés à domicile pour les villes de Hull et de Pointe- Gatineau	Home Care Rehabili- tation Project, Saskatoon	Conva- lescent Nursing Service, Vernon, B.C.
Nursing.....	x	x	x	x	x	x	x	x	x
Homemakers.....	x	x	x	x	x	x	x	x	x
Physiotherapy.....	x	x	x	x	x	x	x	x	x
Occupational Therapy.....	x	x	x	x	x	x	x	x	x
Loan Equipment.....	x	x	x	x	x	x	x	x	x
Drugs.....	x	x	x	x	x	x	x	x	x
Other Medical Supplies.....	x	x	x	x	x	x	x	x	x
Social Case Work.....	x	x	x	x	x	x	x	x	x
X-ray.....	x	x	x	x	x	x	x	x	x
Laboratory Procedures.....	x	x	x	x	x	x	x	x	x
Ambulance.....	x	x	x	x	x	x	x	x	x
Taxi.....	x	x	x	x	x	x	x	x	x
Orderly.....	x	x	x	x	x	x	x	x	x
Meals-on-wheels.....	x	x	x	x	x	x	x	x	x
Speech Therapy.....	x	x	x	x	x	x	x	x	x
Nutritionist.....	x	x	x	x	x	x	x	x	x
Night Sitter.....	x	x	x	x	x	x	x	x	x
Appliances.....	x	x	x	x	x	x	x	x	x
Baby Sitter.....	x	x	x	x	x	x	x	x	x
Dental.....	x	x	x	x	x	x	x	x	x

*Planned for the future.

†The services provided by specific plans are subject to change. They are generally expanded as availability and resources permit.

SOURCE: Kohn, R., *Emerging Patterns in Health Care*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

frequently that new services are incorporated in the programme as the plan grows. It is important that home care patients be readily admitted or readmitted to the hospital when the need arises.

Patients and Their Conditions

What kind of patients are cared for by a home care programme? They are principally the aged and chronically ill. The age composition of patients is fairly uniform among plans where statistics are available.¹ About 70 per cent of the patients are in the age group 60 and over. The remainder comes almost entirely from the age groups between 20 and 60 years, with some plans having from about 3 per cent to 7 per cent of their patients in the age groups under 20.

In contrast, among patients discharged from general hospitals² the age group 60 years and over accounts for only about 15 per cent of the separations, the middle age group (20 to 59 years) for about 46 per cent, and the under 20 group for about 39 per cent.³ This reflects the emphasis in home care plans on the care of the aged, the main age group as far as chronic disease is concerned. The proportion of the over 60 in formal home care plans also exceeds that among patients receiving the more generalized services of the Victorian Order of Nurses.⁴

TABLE 15-2 PERCENTAGE AGE DISTRIBUTION OF HOME CARE PATIENTS

Age	Selected Home Care Plans	General Hospital Separations		Visiting Nursing Services		General Population 1961
		Cases	Days	Cases	Visits	
Under 20.....	5	39	24	19	5	42
20-59.....	25	46	40	27	20	47
60 and over.....	70	15	36	54	75	11
TOTAL.....	100	100	100	100	100	100

SOURCE: Kohn, R., *Emerging Patterns in Health Care*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

¹ British Columbia, Winnipeg General Hospital, Toronto, and Moose Jaw.

² Data for 8 provinces relate to 1960 and were made available by the Dominion Bureau of Statistics.

³ Table 15-2.

⁴ Including the medical and surgical but not the maternity cases.

Little information is available on the distribution of the workload (number of visits or patient-days) by age groups but the British Columbia and Victorian Order data agree in showing that the average number of nursing visits increases with the patient's age:

TABLE 15-3 AVERAGE NUMBER OF NURSING VISITS PER PATIENT

B.C. Nursing Care Programme		Victorian Order	
Age Group	Per Cent of Visits	Age Group	Per Cent of Visits
0-19.....	9.6	Under 15.....	4.2
20-59.....	14.6	15-44.....	10.0
60 and over.....	16.2	45-64.....	19.3
		65 and over....	26.4

SOURCE: Kohn, R., *Emerging Patterns in Health Care*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The conditions treated vary from plan to plan according to its scope and design. The emphasis is on chronic conditions, with cardiovascular patients accounting for about 30 to 40 per cent of the patient load, and cancer for about 10 to 20 per cent. Some plans, however, are limited to certain conditions or emphasize them (e.g., psychiatric disorders or diseases of the nervous system) while others generally will not accept such cases because of the lack of resources or because of other facilities available for the care of these conditions. Thus, plans are selective concerning the type of patients and conditions they accept though sometimes the restrictions imposed at the inception of a plan are relaxed once the programme has been in operation for some time. In stating their objectives, plans often refer in rather general terms to the problems of the aged and chronically ill.

Costs

In regard to the cost of home care and a comparison with the cost of corresponding hospitalization, it is difficult to draw more than general conclusions in the light of available evidence. The main difficulty lies in the lack of uniformity among plans as to the services provided, patients accepted, administrative arrangements, and auspices. This is paralleled by a similar variation in accounting practices. Part of the problem is the inclusion or exclusion of administrative costs, costs of drugs or the services of other agencies (e.g., out-patient departments) used by a home care plan.

An illustration of the per diem cost of four selected home care plans is given in Table 15-4 which also shows the proportion of the administrative (overhead) component.¹

TABLE 15-4 PER DIEM COST OF FOUR SELECTED HOME CARE PLANS

Cost Component	Plan "A" (95 Patients)		Plan "B" (77 Patients)		Plan "C" (57 Patients)		Plan "D" (168 Patients)	
	\$	Per Cent	\$	Per Cent	\$	Per Cent	\$	Per Cent
Service.....	2.57	53	4.01*	54	1.99	55	1.14**	71
Administration.....	2.24*	47	3.43*	46	1.66	45	0.45	29
TOTAL PER DIEM.....	4.81	100	7.44	100	3.65	100	1.59	100

*Provisional figures.

**Excluding the cost of physicians' house calls (\$0.07).

SOURCE: Kohn, R., *Emerging Patterns in Health Care*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The comparatively high proportion of administrative costs may be partly explained by the still largely experimental stage of the plans and the fact that they may not have reached their optimum capacity. The Toronto programme forecasts a reduction in the share of the administrative costs once it "has got down to business-like proportion".² The report goes on to say:

"One may have to explain why the administrative component at its best constitutes so high a percentage of total cost, greater than that found in most enterprise. This should present no difficulty as one makes it clear that in a home care program the administrative individual carries duties of promotion and interpretation, and of actual personal contact, far in excess of those of the basic executive function and that this feature will continue more or less for all time to be a determinant of this element of cost. Administration, in other words, is and will be more than overhead as commonly conceived".

Similar difficulties, as in the inter-plan comparison of per diem costs, arise in any attempt to compare the per diem cost of home care with that of hospital care. We have seen that even in a hospital-based home care plan

¹Plan "A": City of Toronto, Department of Public Health, Pilot Home Care Program (Original Program).

Plan "B": Same (Expansion Program).

Plan "C": The Moose Jaw Community Home Care Program.

Plan "D": The Home-Care Medical Program of the Winnipeg General Hospital.

²City of Toronto, Department of Public Health, *Fourth Annual Report, Pilot Home Care Program*, April 1, 1961-March 31, 1962, p. 21.

not all days are considered to be alternatives for hospital care. The per diem cost, on the other hand, is calculated for all days of care. It is possible that the home care per diem cost would be higher, were it calculated separately for the days actually substituting for hospital stay. Some general idea of the size of the per diem cost under home care on the one hand, and hospital care on the other, may be gained by a comparison of the range of these costs. The cost under the four selected home care plans ranges from \$1.59 to \$7.44 per patient-day. The corresponding cost per hospital day in 1960 ranges from \$4.94 in mental hospitals to \$20.61 in general hospitals.¹

The new approach to psychiatric care² emphasizes the advantages of treating patients in the community and in their familiar environment rather than isolating them in institutions. Rehabilitation, in physical or mental illness, also stresses the benefits of the earliest possible return of patients to their own social setting or one resembling it as closely as possible. All these trends mean new demands on a home care organization which puts at the physician's disposal the range of services required by patients who do not need special services available only in the hospital, including full-time nursing supervision.

The new emphasis on rehabilitation, in physical as well as mental illness, has other implications regarding the role and organization of the various health services. These will be briefly reviewed below.

On the whole we conclude that in most cases home care will be cheaper than hospital care where 38.3 per cent of the operating cost in general and allied special hospitals is accounted for by general services³ other than those provided by the service departments of the hospital.⁴ There is the further saving in capital cost due to the reduced expenditure for hospital construction, if fewer hospital beds are needed. But this reasoning is based on the viewpoint of the agency financing either home care or hospital service, not that of the patient or the community. Comparisons of

¹Costs per hospital day in 1960 were as follows:

all hospitals.....		\$12.99
general and allied hospitals.....		19.47
general.....	\$20.61	
chronic and convalescent.....	8.63	
other special.....	19.23	
mental hospitals.....		4.94
tuberculosis hospitals.....		10.41

SOURCE: Dominion Bureau of Statistics, *Hospital Statistics 1960*, Volume VI, Hospital Expenditures, Ottawa: Queen's Printer, 1963.

² See Chapters 5 and 8.

³ That is: dietary with 13.1 per cent; laundry, linen service, and housekeeping with 8.3 per cent; the rest being administration, and plant operation and maintenance; Dominion Bureau of Statistics, *Hospital Statistics 1960*, Vol. VI, Hospital Expenditures, Ottawa: Queen's Printer, 1963, p. 45.

⁴ Such as, for instance, nursing which accounted for 26.5 per cent of total expenditure; *ibid.*

the total operating cost would have to take into account the cost of maintaining the patient at home, which may be increased substantially where extensive housekeeping and other ancillary services are required.

REHABILITATION

The brevity of the treatment accorded this subject in our Report should not be permitted to reflect upon the importance we attach to rehabilitation. It received much prominence in the evidence submitted to us in the briefs and during the hearings, as well as in our research programme.¹ Rehabilitation, however, is not a specific type of service but rather an objective underlying a great variety of services, some of which are part of the traditional health services while others are new, at least to the health field.

Rehabilitation, like the principle of prevention at the other end of the health service spectrum,² is part of the desirable approach to, and the philosophy of, health and health services. In a report such as ours we can do little more than underline the need for applying the principle of rehabilitation throughout the range of services given to the patient after disease or injury have struck. We also emphasize the need for strengthening those health services which are specifically oriented towards rehabilitation. Their components in terms of personnel and physical facilities are included in our evaluation of these resources elsewhere in this Report.¹ But rehabilitation frequently means more than just medical restoration.

It is not always easy to identify the point where treatment ends and rehabilitation begins. In principle one can say that treatment cures, arrests or alleviates the symptoms of illness or injury while rehabilitation is concerned with removing any residual consequences resulting from an illness.

These residuals may be of a social or economic nature. In other words, we are no longer content with successfully amputating a man's leg should this be necessary, but we are also anxious to restore him as closely as possible to his former social roles or to some role in the family and community which he can successfully perform. For patients in the labour force ages, rehabilitation may mean aptitude tests, vocational or academic training, placement, perhaps financial assistance. For children of school age special schooling may be required. Somewhat different will be the rehabilitation services for those above the retirement age who may be restored from helplessness and dependency to self-care and a considerable degree of inde-

¹ See also Kohn, R., *op. cit.*

² Of prevention, diagnosis, treatment, and rehabilitation.

³ See Chapters 13 and 14.

pendence. For the very young, for example babies with congenital defects, it is a matter of habilitation—learning rather than rehabilitation—regain- ing something that had been lost. The aims and basic methods of rehabili- tation are the same, however, regardless of the patient’s stage in life.

We have compared the principle of prevention with that of rehabili- tation, denoting a purpose rather than a specific service. Both also establish a link between health care and other measures or services making it practi- cally impossible to establish the boundaries of health, and therefore also of health care and services. In the field of rehabilitation we have established the need for specific services such as those of the physiatrist, the physio- therapist and other therapists, the psychiatrist and psychologist, and facilities such as the rehabilitation wings in hospitals and rehabilitation centres.

The services typical of rehabilitation procedures have increased in Canadian hospitals in recent years, and what distinct units and centres are in operation in public institutions are of comparatively recent origins following those established earlier by the Department of Veterans Affairs and Work- men’s Compensation Boards. Table 15-5 shows the upward trend during one recent year in the percentage of general and chronic hospitals providing some of these services in organized units, the trend being more pronounced in the chronic hospitals.

TABLE 15-5 PERCENTAGE OF GENERAL AND CHRONIC HOSPITALS WITH SPECIFIED ORGANIZED SERVICES, CANADA, 1959 AND 1960

Service	Per Cent of Hospitals with Organized Units			
	General Hospitals		Chronic Hospitals	
	1959	1960	1959	1960
Physical Medicine.....	2.5	2.5	5.4	12.2
Physiotherapy.....	26.7	31.5	42.9	70.8
Occupational Therapy.....	3.4	3.8	23.2	43.9
Speech Therapy.....	1.7	2.5	7.1	17.1
Social Service.....	4.4	4.6	10.7	12.2

SOURCE: Dominion Bureau of Statistics, *Hospital Statistics*, Vol. II, Hospital Services, 1959, p. 76, and *ibid.*, 1960, p. 92, Ottawa: Queen’s Printer, 1964.

By 1962, physical medicine and rehabilitation services¹ were estab- lished in:

- 30 general hospitals,
- 10 chronic hospitals,

¹Information supplied by the Department of National Health and Welfare.

14 children's hospitals,

12 hospitals administered by the Department of Veterans Affairs.

There were 43 independent rehabilitation centres, distributed as follows:

16 general rehabilitation centres (for children and adults with any type of disability),

23 children's rehabilitation centres (including 11 for cerebral palsy),

4 workmen's compensation centres (Quebec, Ontario, Alberta, British Columbia).

Medical rehabilitation services in nearly all of the in-patient hospitals and centres¹ are directed by orthopaedists or paediatrists.

The beds set up by 1962 in these rehabilitation units and centres totalled 18,840. Of these, 784 beds in 15 hospitals were designated as "rehabilitation", "orthopaedic", "geriatric", "convalescent" or "polio". Of the 1,693 beds in the 10 chronic hospitals, 349 were similarly designated. Fourteen rehabilitation centres with in-patient facilities had a total of 933 beds.²

The Department of National Health and Welfare estimates that in 1962, at least 20,000 disabled persons were treated as out-patients or in-patients at the general and children's rehabilitation centres in addition to some 12,000 treated at the workmen's compensation centres.

On the whole, rehabilitation services in Canada are insufficient. What has been said recently of Ontario applies generally:

"In certain areas there are few or no facilities for physical restoration, speech therapy, job assessment, psychiatric care, or provision of braces or artificial limbs. Most centres are located in the larger cities but even in communities where the greatest number of rehabilitation services exist they are barely adequate and there are waiting lists for admission".³

One might add that the potential of rehabilitation is as yet far from being fully appreciated by the disabled and even some physicians.

In addition to the facilities and services provided in hospitals and rehabilitation centres, there is a considerable number of clinics operated by voluntary agencies providing certain rehabilitation services but not the wide range found in the centres. These may be operated for certain types of disabilities or certain services such as physiotherapy. Some of these agencies also employ mobile units to reach their patients.

¹ Generally covered under the provincial hospital insurance schemes.

² 567 beds in 9 general rehabilitation centres, 186 beds in 4 children's rehabilitation centres, 180 beds in workmen's compensation centres.

³ Godfrey, C. M., Jousse, A. T.: "Rehabilitation Facilities in Ontario," in *The Canadian Medical Association Journal*, Sept. 28, 1963, Vol. 89, pp. 657-662.

Facilities and Personnel

We have described rehabilitation not as a type of service but as a concept or objective receiving increasing emphasis at the various stages of treating the sick and injured. In particular, rehabilitation is not confined to hospital units or centres designated for this purpose: on the contrary, there is a strong tendency to get patients out of institutions and to adjust them as effectively as possible to their optimal role in the home and community. This applies to both physical and psychiatric disorders and care. The designation of certain facilities as "rehabilitation" is therefore arbitrary to a certain extent. We have found it difficult to distinguish clearly between treatment and rehabilitation. Similarly it is not always easy to separate facilities for rehabilitation, convalescent, or geriatric care. For instance any hospital units designated as convalescent, geriatric, chronic, or orthopaedic will have a strong element of rehabilitation service whereas on the other hand, beds earmarked for "rehabilitation", may well be used for acute or chronic treatment.

No general standard has as yet been developed for the bed requirements for rehabilitation services, because we have nowhere reached all the disabled who could profit from rehabilitation. Therefore we do not know what the case load and the demand would be once we reach the saturation point:

"... no matter how big your rehabilitation facilities may be, they seldom seem adequate to meet all of the hidden need . . ."¹

Desirable bed ratios ranging from 0.5 to one bed per 1,000 population are sometimes mentioned, as is the desirability of a rehabilitation unit in all general hospitals above a given size (from, say 100 to 300 beds), or a rehabilitation centre for communities with about 300,000 population or over.

None of the recent major surveys of hospital needs carried out in various parts of Canada specify the number or ratio of rehabilitation beds required, though they invariably stress the need for strengthening the rehabilitation services in hospitals. The Saskatchewan Hospital Survey distinguishes various levels of rehabilitation services, the most elaborate being provided by "base services", followed by "regional", "district", and "itinerant services".² Because of the unknown reservoir of the disabled in the community and the extent of treatment outside the hospital, the Survey of Hospital Needs in Metropolitan Toronto came to the conclusion that "there

¹ Carpendale, M. T. F., *The Need for Medical Rehabilitation: Experience in Alberta—1956-1959*, in "Rehabilitation in Canada," Department of Labour, Ottawa, Summer 1963, p. 17.

² Summary of *Saskatchewan Hospital Survey and Master Plan 1961*, Part I, A Report of the Hospital Survey Committee, Health Services Planning Commission, Saskatchewan Department of Public Health, Regina: February 1963.

is no magic formula for determining the number of beds or facilities required for the care of chronically ill children or of the physically incapacitated".¹

Nevertheless, physical medicine and psychiatry have developed a body of knowledge and techniques aimed directly at the rehabilitation of the handicapped. This has led to the establishment of rehabilitation units in hospitals and rehabilitation centres to supplement these units where necessary, and it has also brought about a strengthening of rehabilitation services and personnel in hospitals with or without a formal rehabilitation unit or rehabilitation beds.²

It is the social worker or the social service department that is instrumental in helping the patient to bridge the gap between the health service and other social services he may require. Sometimes this task is performed by the visiting nurse. In the context of modern rehabilitation services we also find psychologists, vocational guidance services, and placement officers attached to rehabilitation units or centres. The transition from occupational therapy to vocational training is sometimes far from clear cut, for instance in rehabilitation centres operated by Workmen's Compensation Boards, and regular school classes which are held in rehabilitation centres for children.

This emphasizes the need for closest co-ordination between the health services proper and other community services which are equally essential if the patient is to derive the full benefit from his medical restoration. These other services fall under the administrative jurisdiction of departments of education, labour, or welfare whose effective co-ordination is as difficult as it is necessary.³

Prosthetic Devices, Appliances, and Aids

Among the services not discussed elsewhere in this Report is the provision of prosthetic devices, appliances, and aids which in many cases form an essential part of the rehabilitation process.

The lack of data regarding the number and characteristics of people who could profit from modern rehabilitation procedures prevents any attempt

¹ *Hospital Accommodation and Facilities for Children in Metropolitan Toronto*, Part Six of a Study by the Committee for Survey of Hospital Needs in Metropolitan Toronto; November 1962, p. 43.

² *Saskatchewan Hospital Survey and Master Plan 1961*, *op. cit.*, estimates the minimum number of personnel required to staff "adequate hospital-centred rehabilitation programs" in Saskatchewan 1961-1970, as follows:

Physical Medicine	9
Physical Therapy	46
Occupational Therapy	18
Speech Therapy	6
Medical Social Work	11

The population of Saskatchewan is estimated in the Report to reach 971,204 by 1970.

³ A problem which will be further discussed in Volume II of this Report.

to estimate the extent to which specific services are or will be required. Further study and experience is needed but this does not diminish the need to take positive action in dealing with some of the groups that exist in this field.¹

CONCLUSION

Home care and rehabilitation, two of the patterns of service emerging in the health services complex, are closely related. Like the new approach to the care of psychiatric disease and the development of medical group practice, they do not so much represent new types of services as new methods of employing and organizing a multiplicity of services. While they do not lend themselves as we have observed, to the same kind of quantitative analysis to which we can subject matters of the supply of personnel and facilities, these new forms of organization of our health services will mean changes and shifts in the demand for specific services. To the extent, for instance, that a home care plan keeps patients out of the hospital, it will mean more time consuming home calls for the physician; on the other hand, however, the need for home calls will be less frequent due to the fact that visits by the nurse and other health workers in the home care plan will to some extent substitute for the physician's visits. The new possibilities of active treatment and rehabilitation in the field of chronic disease, both physical and mental, will mean a shift from long-term largely custodial—and therefore less expensive—institutional care to shorter but costlier active care. This will result in better and more effective care and we may also find that the shorter duration of care with a high unit cost will often compensate for the high total cost of long-term care with a lower unit cost.

The characteristics and implications of new patterns in the organization, provision, and utilization of the various health services will be further discussed in Volume II of the Report. They are bound to be affected by the new methods of financing health services which we recommend. It may suffice here to stress the fact that good health services require not only personnel and facilities, and not only an equitable way of financing but also an effective organization and co-ordination of the many facets of our system of health services proper and other community services required to supplement and complete, as in the course of rehabilitation, what medical science can accomplish.

Having established the various benefits to be derived from organized home care programmes, and in view of the fact that experience has shown

¹ See Chapter 2, Recommendations 113-115.

their particular contribution in the care of the aged and chronically ill, which are among our main health problems, we recommend measures to foster the implementation of home care plans.¹

We reiterate the importance of rehabilitation as an essential range of services in restoring the individual to a useful role in the community. We recommend measures to expand specialist manpower in the field of physical medicine² and the provision of physiotherapy and, where applicable, of prosthetic and orthotic devices, appliances, and aids, as medical benefits under the Health Services Programme.³ Because of the growing demand for prosthetic services of all types, as well as in order to keep pace with the rapid advances in the technology of the various devices, we also recommend that particular attention be given to research related to these matters.⁴

¹ Chapter 2, Recommendations 116-123.

² Chapter 2, Recommendations 151-152.

³ Chapter 2, Recommendations 30(k) and (1), 113 and 114.

⁴ Chapter 2, Recommendation 115.

Drug Industry

Our Terms of Reference require us to provide estimated costs of health services now being rendered to Canadians with projected costs of any changes that may be recommended for the extension of existing programmes or for any new programmes which we may suggest.

Since prescribed drugs are an essential and integral part of health care, we pointed out in Chapter 2 that a comprehensive and universal health care programme should include them as a benefit.¹ Our views are shared by the Canadian Pharmaceutical Association which stated that "any comprehensive health care plan must include the provision of drugs and pharmaceutical services".²

Drug expenditures are a major drain on the financial resources of a consumer, particularly in cases of serious and prolonged illness requiring high priced drugs. We have established in Chapter 9 that expenditures on drugs are almost as large as outlays on medical care in Canada.³

Many complaints were heard about high drug prices in Canada, but submissions from drug manufacturers claim that drug prices have risen less rapidly than prices of most other consumer goods and services.⁴ In Chapter 17, evidence is presented which indicates that drug prices in Canada are among the highest of any industrialized nation in the world, and that prices paid for identical drugs by the individual consumer are in a number of cases several times the prices for which these drugs can be made available through institutions, e.g., hospitals, government agencies, etc.

Chapter 17 also examines the claim of the drug industry that drug prices on the whole have risen very little in the post-war period. This claim is based on the Drug Price Index which forms part of the Consumer Price Index compiled by the Dominion Bureau of Statistics. This Index covers

¹ See Chapter 2, Recommendation 58.

² *The Canadian Pharmaceutical Association, Inc.*, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 159.

³ Drug expenditures covering both prescribed and non-prescribed drugs in 1961 were equivalent to 95 per cent of expenditures made on physicians' services in Canada in that year.

⁴ *Canadian Pharmaceutical Manufacturers Association*, brief submitted to the Royal Commission on Health Services, Toronto 1962, pp. 40-41.

five drug items whose prices have changed comparatively little over the post-war period, a minute fraction of the several thousand drug items in use in Canada as prescription drugs. It does not reflect many of the high priced pharmaceuticals that have come on the market in recent years.

The data in Chapter 17 indicate that the majority of prescribed drugs are in the lower priced category. But, when prolonged or serious illness strikes, the cost of drugs payable by those who can frequently least afford to pay for them is a heavy burden on the families affected.

We are primarily concerned with (1) assessing the essential role of prescribed drugs as part of an integrated health service, (2) estimating the costs of providing such services and the increased costs that may result from a more extensive programme recommended, (3) indicating some of the more important factors contributing to the level of drug costs and prices presently prevailing in Canada, and (4) recommending measures which governments could take to enable the drug industry to bring costs and prices of drugs down to a level which would be more acceptable to the Canadian public, and which would facilitate the implementation and financing of a comprehensive prepaid drug programme in Canada such as we recommend in Chapter 2.

In essence then we are concerned with what it would cost Canadians to obtain the necessary drug benefits and how the burden of providing such services can be shared effectively and equitably.

In preparing the estimates of the future costs of a prepayment programme for prescribed drugs, we had to consider the question of whether we should base our estimates on the assumption that governments in the future will take an increasing interest in the subject of drug costs and prices and whether such growing interest might lead to measures designed to bring about prices of drugs in Canada as low as can be achieved through economic production and distribution while still maintaining high quality.

As an alternative we would have had to assume that governments would leave drug prices to be settled in the market place and not change the various protective devices which apparently contribute to keeping up prices on drugs, e.g., certain provisions relating to patents, trademarks and tariffs.

Chapter 9 indicates that the public is concerned about costs and prices of drugs and that in response to this concern a number of legislatures in Canada have pursued various inquiries and investigations leading to reports and recommendations dealing with the quality and price of drugs. We are, therefore, concluding that we should take account of the growing public interest in this area and the increasing concern shown by legislatures, and assume that the various inquiries undertaken or likely to be pursued in the future might lead to the adoption by legislatures of some measures directed toward lowering of prices of prescribed drugs sold in Canada.

In order to make the appropriate recommendations in the drug field, we have reviewed the structure of the Canadian drug industry, trends of costs and prices of drugs and the effect of legislative provisions on costs and prices. We have relied greatly on the numerous inquiries pursued by legislatures, and on the various submissions and evidence put before the Commission as well as on the work of other Commissions and Committees of Enquiry.¹

This chapter presents the existing pattern of manufacturing and distribution of drugs—the latter including wholesale and retail distribution—, foreign control of the drug industry in Canada, domestic production and imports, advertising and promotion, and research and development. In Chapter 17, which deals with drug costs and prices, an examination is made of the components of the present price and cost structure of drugs covering manufacturing, wholesaling and retailing, drugs imported and manufactured in Canada, price trends covering the post-war period, and an international comparison of drug prices. Chapter 17 also reviews existing legislation affecting the manufacture and distribution of drugs including the Patent Act, Trade Marks Act, Tariffs, and other legislation.

This chapter and Chapter 17 also include an assessment of other problems in the drug field in Canada, some of which are of significant importance to merit consideration by governments. We have, therefore, made appropriate recommendations concerning drugs in Chapter 2.²

EXISTING PATTERNS OF MANUFACTURE AND DISTRIBUTION

Manufacture

The Dominion Bureau of Statistics publication "Manufacturers of Pharmaceuticals and Medicines" for the year 1960 reports that the industry was composed of 198 establishments, and the selling value of their shipments amounted to \$165 million. These manufacturing establishments are concentrated in Ontario and Quebec which jointly account for 98 per cent of the total of 7,994 persons employed in the industry.³ Approximately 92 per cent of the total value of all products shipped by the industry in 1960 consisted of medicines and pharmaceuticals, the remainder was comprised of disinfectants, insecticides, toilet preparations, etc.⁴ Of the total shipments of medicines and pharmaceuticals, 16 per cent consisted of proprietary products which comprise the familiar patent medicines and home remedies.

¹ See Chapters 2 and 9.

² See Chapter 2, Recommendations 58-82.

³ Restrictive Trade Practices Commission, *Report Concerning the Manufacture, Distribution and Sale of Drugs*, Ottawa: Queen's Printer, 1963, p. 37.

⁴ *Ibid.*, p. 40.

In the Dominion Bureau of Statistics publication covering 1959, the industry was reported to comprise 188 establishments. Of these the Canadian Pharmaceutical Manufacturers Association estimated that about 70 were multiple-line ethical drug manufacturers, 75 were multiple-line proprietary drug manufacturers, and the balance were agents, wholesalers and retailers who also manufactured some medicinals, plus packaging concerns and other suppliers. In addition there were two major companies, not listed by the Dominion Bureau of Statistics in that year, which did manufacture ethical pharmaceuticals and which were members of the Association.¹

The principal types of manufacturers in the ethical drug field are described in the Green Book as follows:

"(a) *Manufacturers of basic drugs.* Some firms, of which Fine Chemicals of Canada Limited is an example, simply manufacture basic drugs and sell these drugs in bulk to other firms. Also, U.S. and European firms which simply manufacture basic drugs maintain sales agencies in Canada. The large ethical drug firms mentioned in the next paragraph also manufacture basic drugs and some sell certain of these drugs in bulk form and in prepared dosage forms, in bulk quantities, to other manufacturers and distributors. They also, of course, sell prepared dosage forms under their own labels through their own sales organizations to the trade and public.

"(b) *Large ethical drug houses.* These firms specialize in ethical drugs, although they may carry a few proprietary drug lines. In some cases, one firm will operate in the ethical drug field while a related firm will operate in the proprietary medicine and sundry field. Thus, Bristol Laboratories of Canada, Ltd. is a related company to Bristol-Myers Company and Riker Pharmaceutical Company, Limited is the ethical drug firm of the Rexall Drug group. The principal characteristics of the large ethical drug firms are that they have the facilities to manufacture and prepare complicated drugs and dosage forms of these drugs, that they carry on research, that they are able to develop company specialties either by developing new drugs or by developing combinations which have or are claimed to have unique properties, and that they are able to carry out promotional activities on a scale that ensures that their products are known and recognized by the medical and pharmacal professions. These firms have established reputations, which appear to be fully deserved, for high-quality products. Much of the research, development of specialty products and quality control exercised in the preparation of products is carried on outside Canada.

"(c) *Small ethical drug houses.* These vary widely in size but seem to be generally differentiated from the large ethical drug houses not only on the basis of size or volume of business, but also because they do not deal in the newer and more complex drugs (unless they merely purchase such drugs for resale); they carry on little or no research,² "they are not able to develop new drugs or important specialties and they are unable to carry on elaborate promotional campaigns. The products which they do sell may be of high quality, indeed some have usually been purchased from the large ethical drug houses and are identical with those sold by the latter, but the small firms do not enjoy the same reputation as the large firms.

¹ *Canadian Pharmaceutical Manufacturers Association, op. cit.*, p. 23.

² This statement is being disputed in representations to the Restrictive Trade Practices Commission; the President of Nordic Chemicals Limited denied the suggestion that no small drug houses carry on research on the same scale as their larger rivals.

"(d) *Specialty firms in the ethical drug field.* Some firms are small in terms of volume of business because they specialize in a particular field of drugs but, within that field, their products are generally recognized as being among the best available. An example is Baxter Laboratories of Canada, Limited which specializes in parenteral solutions and related products. (Baxter Laboratories of Canada, Limited is a wholly-owned subsidiary of Baxter Laboratories, Inc., Illinois.)

"(e) *Custom manufacturers and packagers.* Some firms are custom manufacturers or packagers. They either buy or are supplied with the basic drugs and prepare dosage forms and package them for other firms. They do not, themselves, sell directly to the trade or the public. The information supplied to the Director indicates that the number of these firms is increasing, apparently as small manufacturers and distributors wish to add products made to their orders and specifications to their lines.

"(f) Certain firms whose main business is in related fields are important distributors of drugs. Ingram & Bell Limited, for example, does the bulk of its business in surgical supplies and hospital equipment, but also does a large business in drugs. It sells drug products which it manufactures or has manufactured to its specifications and acts as the national distributor for certain other manufacturers.

"(g) Many foreign firms do not have branches or subsidiaries in Canada, but are represented by agents in Canada. These firms usually have a limited line of products and do only a relatively small amount of business in Canada. In these cases, the drug products come into Canada packaged and ready for resale."¹

In their representations to us both the Canadian Pharmaceutical Association² and the Canadian Pharmaceutical Manufacturers Association³ advanced the suggestion that the large number of firms in the industry and the small share of the market held by each, means that there is little concentration of market power. The implication is that the existence of effective competition may properly be assumed. In our view, however, the statistics by themselves do not support such a conclusion.

The facts are that in 1959, 38 firms reported factory shipments in excess of \$1 million and accounted for 84 per cent of the total for the industry. The remaining 16 per cent was accounted for by 149 firms, 82 of which reported factory shipments amounting to less than \$100,000.⁴ Of the 38 firms reporting factory shipments in the ethical drug field in excess of \$1 million, 29 can be identified as follows:

Abbott Laboratories Limited
Anca Laboratories
Ayerst, McKenna & Harrison Limited
Baxter Laboratories of Canada Ltd.
Bristol Laboratories of Canada Limited

¹ Green Book, *op. cit.*, pp. 61-62.

² The Canadian Pharmaceutical Association Inc., *op. cit.*, p. 42.

³ Canadian Pharmaceutical Manufacturers Association, *op. cit.*, p. 26.

⁴ *Ibid.*

The British Drug Houses (Canada) Ltd.
Burroughs-Wellcome & Co. (Canada) Ltd.
Ciba Company Limited
Charles E. Frosst & Co.
Geigy Pharmaceuticals, Division of Geigy (Canada) Limited
Frank W. Horner Limited
Laboratoires Nadeau Limitée
Lederle/Cyanamid of Canada Ltd.
Eli Lilly & Company (Canada) Limited
Merck Sharp & Dohme of Canada Ltd.
The Wm. S. Merrell Company
Ortho Pharmaceutical (Canada) Ltd.
Parke-Davis & Company, Ltd.
Pfizer Canada
Poulenc Limitée
A. H. Robins Company of Canada Ltd.
Rougier Inc.
Schering Corporation Limited
Smith Kline & French Inter American Corporation
E. R. Squibb & Sons of Canada Limited
The Upjohn Company of Canada
Warner-Chilcott Laboratories Co. Limited
Winthrop Laboratories of Canada Ltd.
John Wyeth & Brother (Canada) Ltd.¹

The competitive impact of the majority of the remaining firms in the industry is likely to be small and may thus not offer a major challenge to the position of the larger companies, most of whom have international connections.

There is another more basic reason for questioning the suggestion that a large number of firms in the industry provides assurance that competition will be effective. This is that drugs are used to treat specific conditions. Many drugs do not have close substitutes and can scarcely be considered competing products in any real sense. Even where a number of drugs may be prescribed for the same condition, there may be few firms with competitive products on the market, if others have been excluded by the existence of patents, or the successful promotion of certain brand names. Where the consumer cannot substitute one product for another because of the specific character of the remedy or where the producer cannot shift from the production of one product to the production of another because of patent obstacles or the expense of promoting a new brand, it is necessary to consider the conditions affecting the supply of each individual drug in order to make a valid judgment about the degree of concentration or the effectiveness of competition which exists.

In response to our request the Canadian Pharmaceutical Manufacturers Association on April 30, 1962 provided us with answers in the form of a brief to a number of specific questions we had asked about the

¹ Green Book, *op. cit.*, p. 146.

industry. For the purpose of answering the questionnaire a survey of 40 pharmaceutical manufacturing companies was undertaken by Clarkson, Gordon & Co. of Toronto covering the year 1960, henceforth called the Clarkson Survey. Five firms were unable to provide a detailed breakdown of sales according to the classification required and the questionnaire therefore depended upon the answers received from 35 companies. These 35 companies reported sales of human pharmaceuticals of \$102,633,000, or 62 per cent of total sales in Canada. They included most of the large companies referred to above by the Director of Investigation and Research under the Combines Act. Of the total sales by these companies of human pharmaceuticals \$38.7 million or 37.6 per cent were sales to wholesalers; \$37.1 million or 36.2 per cent were direct sales to druggists including drug chains and dispensing physicians; \$19.8 million or 19.3 per cent took form of sales to general hospitals and institutions; \$4 million or 3.9 per cent were sales to governments; and \$3.1 million or 3 per cent represented export shipments. These 35 companies also made sales of veterinary pharmaceuticals, proprietary medicines, chemicals and other products amounting to \$16.9 million. Information covering sales to other manufacturers and importers was not given separately for these 35 companies. However, all 40 companies reported that they manufactured \$3 million worth of merchandise, including \$2.8 million of human pharmaceuticals for other members of the Canadian Pharmaceutical Manufacturers Association. In the above breakdown, sales to governments, to hospitals, and on export are low-priced sales and therefore represent a higher proportion of volume than they do of value.

Wholesale Distribution

According to the 1951 Census of Canada there were at that time 141 wholesale distributors of drugs and drug sundries.¹ From 1951 to 1959 sales by all wholesale distributors of drugs increased by approximately 64 per cent reaching a total of around \$220 million in 1959.² "True" drug wholesalers, which might be defined to include only those carrying a complete stock of pharmaceuticals, are estimated to have numbered only about 42 in 1961.³ Apart from the wholesale distributor proper, the other main class of operation covered by the Census in the distributing depot which stocks and handles the products of one manufacturer only. Such depots are usually either owned or controlled by the manufacturer.

A full-line drug wholesaler may stock upwards of 8,000 pharmaceutical products, plus sick-room supplies, first-aid products, fine chemicals,

¹ The 1961 data were not available when this chapter was drafted. This is another example of data losing their usefulness because of the time taken to publish them.

² Green Book, *op. cit.*, p. 81.

³ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 61.

essential oils, elastic support products, health appliances, prescription glassware, patent and proprietary medicines, toilet articles and cosmetics, for a total inventory of some 27,000 items. A druggist can usually purchase more economically from a manufacturer than from a wholesaler. The druggist's savings from direct buying may not be appreciable, however, unless his order reaches a minimum size. He is therefore likely to buy directly from the manufacturer those drugs which he sells in considerable quantity and to obtain from the wholesaler those drugs he sells in small volume. The wholesaler in effect carries the stock for the retail druggist and permits the latter to operate with a smaller inventory.

Apart from the large number of items carried there are several other distinctive features about the operations of drug wholesalers. For example, it is necessary for a wholesaler to obtain a signed order from a licensed pharmacist before he may deliver any one of 452 narcotic preparations and 929 "controlled drug" preparations. These items involve reports and records under the Narcotic Control Act and the Food and Drugs Act. Another distinctive feature of the wholesale drug business is that shipments are usually made in less than case lot quantities thus requiring additional handling. Only 9 per cent of all orders are for original case quantities.¹ Other uncommon features of the drug wholesale business are that many wholesalers provide same-day service and also maintain an emergency 24-hour service. Also many wholesalers employ registered pharmacists to maintain control over the handling of potent or restricted drugs. Finally, wholesale drug firms, whose main business is distributing the products of other manufacturers, frequently package and sell a limited line of the more common proprietary drugs and household remedies under their own labels.²

Nearly 96 per cent of total sales by drug wholesalers in 1957 were made to retailers, only 2.5 per cent to hospitals and institutions, 1.5 per cent to other wholesalers and 0.2 per cent to other buyers.³ An indication that this situation may be changing is given in the submission made by Dr. J. L. Summers, Director of Pharmaceutical Services of the University Hospital in Saskatoon who said: "As far as the hospital is concerned, we use the wholesale to a very large degree because we find it impossible to stock all drugs, and we use the wholesale as sort of an additional stock-room to get small quantities of drugs on very short notice. There are a number of suppliers who supply only through wholesale, and therefore in this area we deal with the wholesale in very large volume".⁴ Also a survey of purchases by 162

¹ *Ibid.*, pp. 60-61.

² Green Book, *op. cit.*, p. 62.

³ Department of National Health and Welfare Research and Statistics Division. *Report on the Provision, Distribution, and Cost of Drugs in Canada*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

⁴ Transcript of evidence, *Hearings*, January 24, 1962, Vol. 19, p. 4467.

hospitals in Ontario, covering the year 1959, showed that smaller hospitals obtained almost 23 per cent of their drugs from wholesale distributors, while even the larger hospitals affiliated with the medical schools obtained almost 16 per cent of their drugs from the same source.¹

Retail Distribution

Drugs are available to the consuming public or to segments of it through retail pharmacies, hospital pharmacies, dispensing physicians, government agencies, industrial dispensaries, volunteer and other health agencies, and private institutions such as nursing homes, etc. Physicians in every province may legally dispense the drugs which are required by their own patients. Also, under certain circumstances, they may register to provide pharmacy services to other than their own patients. This is particularly common in remote areas. As much as \$15 million worth of drugs at retail value may be dispensed in this way.² The government agencies which actually dispense drugs include the federal departments of National Defence, of Veterans Affairs, and of National Health and Welfare (Indian and Northern Health Services), provincial government dispensaries for some indigent and welfare cases, and at the municipal level, community health offices providing immunization services, and some school boards which provide vitamins, etc. Industrial dispensaries, in addition to acting as first-aid stations, may make drugs available for on-the-job needs and prophylaxis programmes.³

The various services provided by the retail pharmacist may be summarized as follows:

1. Maintaining adequate supplies of drugs even of those in little demand.
2. Standing subject to call 24 hours a day.
3. Acting as a source of information to the physician regarding the efficacy or contra-indications of drugs.
4. Acting as a reminder to the customer with regard to the proper method of using the prescribed drug.
5. Acting as a check on possible errors in the physician's prescription.
6. Maintaining a close check on repeat prescriptions.
7. Assuming legal responsibility for dispensing certain drugs (there is a wide range of drugs and poisonous materials apart from prescription items, the retailing of which is restricted by law to pharmacists).
8. Making the pharmacy premises available as a place of first aid.
9. Stocking vaccines for public health programmes.

¹ Report of the Select Committee of the Ontario Legislature on *The Cost of Drugs*, 1963, Appendix C.

² Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

³ *Ibid.*

10. Giving customers advice on the relative merits of non-prescription products for treatment of self-diagnosed minor ailments.

Over the years there has been a great increase in the supply by manufacturers of drugs already put up in prepared dosage forms. As a result, in most cases less than 50 per cent¹ of the druggist's time is devoted to professional dispensing work as distinguished from selling activities related to other merchandise.² The Saskatchewan Pharmaceutical Association estimated that just under 10 per cent of all prescriptions issued in Saskatchewan retail drug stores are compounded in the store.³ Even this low figure appears to be somewhat high judged by other estimates which were given to us. In British Columbia in 1960, compounded prescriptions are estimated to have accounted for 3 per cent of the total number of prescriptions and only 2.5 per cent of the total dollar volume.⁴ In its Report the Restrictive Trade Practices Commission quotes two other estimates, both based on surveys, one by the Alberta Pharmaceutical Association which reached the conclusion that only 3.96 per cent of all prescriptions in that province were compounded by the pharmacist, and the other by Dean F. N. Hughes and Professor G. C. Walker who estimated that only 5 per cent of all prescriptions were compounded by pharmacists. The result of this change, according to the Canadian Pharmaceutical Association, is that "... In practice, pharmacy techniques have become less important, while Pharmacy's knowledge of medicinals, their uses, contra-indications, dosages and toxicity have become increasingly vital . . ."⁵

The most important reason for the increased supply by the manufacturer of drugs in dosage form is that dosage forms of certain of the newer drugs and combinations of drugs particularly, require more elaborate control and handling than can be done conveniently at the pharmacist's level. There can be little doubt, however, that a contributing reason for the change is the increasing use of trade names for particular combinations of ethical drugs. In any event, the evidence presented to us supports the contention that the role of the pharmacist is changing requiring more intensive professional training. The majority of provinces in their regulations governing the registration of pharmacists now require four years of academic training and a relatively short period of apprenticeship.⁶ In such circumstances where the druggist is highly qualified academically he may act as a valuable consultant

¹ Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4432.

² See section on drug retailing in Chapter 17.

³ Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4432.

⁴ *Ibid.*, February 21, 1962, Vol. 29, p. 6312.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 384.

⁶ Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

to the physician on the efficacy and safety of drugs, and as a source of current information about drugs for the physician.

Dominion Bureau of Statistics figures for 1961 show that independent drug stores had total sales of \$362 million and chain drug stores had total sales of \$56 million.¹ According to the Canadian Pharmaceutical Association about 90 per cent of all drug stores are individually owned and operated. The chain stores numbered only 431 stores altogether and these were operated by 39 companies so that it is clear there are no giants in drug retailing.² The Association's annual survey for 1960, (which is based on 664 pharmacies or one out of every eight in Canada) reveals that the average Canadian retail pharmacy reporting had a sales volume of \$106,688. The average pharmacy dispensed 8,846 prescriptions or 24 per day, at an average price of \$3.06.³ However, 61 per cent of all druggists sell below the average sales volume, and in fact 11 per cent sell below \$50,000 per annum.⁴

The annual surveys conducted by Professor H. J. Fuller on behalf of the Canadian Pharmaceutical Association reported in the Canadian Pharmaceutical Journal, show that prescription sales are becoming an increasingly important part of the average retail druggist's business. The following are the percentage figures based on the surveys in the indicated years:

1951	15.1
1952	18.2
1953	16.3
1954	19.8
1955	20.0
1956	22.1
1957	23.7
1958	23.6
1959	26.0
1960	25.0
1961	26.0

The point was made to us in our hearings that in many cases it was possible for retail druggists to provide pharmacy services to their community only because they were also selling a great many other products.

The Canadian Pharmaceutical Association stated that the "average" Canadian retail pharmacy, covered in the Association's annual survey, reported that 25 per cent of sales were from prescription drugs and 75 per cent from sundry items.⁵ The Association concluded that most stores could

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 380.

² *Ibid.*, p. 386.

³ *Canadian Pharmaceutical Journal*, Volume 94, Number 9, September 1961, pp. 2 and 3.

⁴ *The Canadian Pharmaceutical Association Inc.*, *op. cit.*, p. 70.

⁵ *Ibid.*, p. 69.

not survive if their operations were confined to pharmacy services.¹ A similar point was also made by the Ontario Retail Pharmacists' Association: "the pharmacist in answer to public demand entered into what has been called the drug sundries field and the bulk of the business of the retail pharmacy today consists of drug sundries".²

The Select Committee of the Ontario Legislature observed that it is "economically essential for a pharmacy to sell commodities and merchandise other than drugs. The revenue from the operation of a pharmacy which can be allocated to the prescription department averages slightly more than 20% of the gross store revenue from sundries and non-proprietary items".³

The Select Committee went on to say: "Another anomaly in pharmacy operation which was brought to our notice is the situation wherein a pharmacist is required to be on duty at all times while his store is open. This presents an obvious difficulty to the store with only one pharmacist who, in order to leave the premises for any purpose, must close his store with an ensuing loss of revenue and presumable inconvenience to his customers".⁴

While presumably a drug store could stay open when the pharmacist left the premises for a short period after closing the section devoted to drug dispensing, clarification of the appropriate provincial legislative provisions seems desirable to deal with the presentations made by retail druggists.

In Manitoba a spot check of pharmacies in different areas of the province disclosed that the number of prescription drugs stocked, ranged from 1,300 to 5,700.⁵ In this survey approximately 5 per cent of all the drugs stocked bore an expiry date, that is, after a given date they might not be dispensed but had to be destroyed. This points to one of the special features of the retail drug business.

The retail pharmacist cannot merchandise his prescription drugs in the same way as an ordinary merchant. He cannot decide to have a sale because he is over-stocked or wishes to put in a new line, or wishes to dispose of a slow-moving line.⁶ He must wait upon the physician's prescription. As a result retail pharmacists do not have the same opportunity to engage in bulk purchasing of drugs as is possible, for example, in the case of large hospitals where the requirements for the more commonly used drugs can be anticipated fairly readily and purchases made accordingly. The retail

¹ *Ibid.*, pp. 66-71.

² The Ontario Retail Pharmacists' Association, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 7.

³ Report of the Select Committee of the Ontario Legislature, *op. cit.*, p. 30.

⁴ *Ibid.*

⁵ According to the Manitoba Pharmaceutical Association the number of drugs stocked depends mainly upon the number of physicians serving the area. *The Manitoba Pharmaceutical Association*, brief submitted to the Royal Commission on Health Services, Winnipeg, January 1962, p. 16.

⁶ Against this there is the practice of the drug manufacturer or wholesaler taking back outdated stock.

druggist, on the other hand, cannot readily do much bulk purchasing. If he did he might find that apart from having to meet the cost of maintaining an excessive inventory he could not sell the medication before it lost potency or otherwise deteriorated.¹

Drug stores in Canada are not only growing in number, in 1962 there were 4,937 versus 4,325 in 1951, but they are growing larger. If the total population is divided by the total number of pharmacies to give the average number of persons served per pharmacy, the figure for 1962 is 3,761 versus a figure of 3,418 for 1951.² Naturally the density of drug stores in relation to population varies considerably across the country. In 1960 the highest density existed in Saskatchewan where there was one drug store to serve every 2,849 people and the lowest density existed in Newfoundland where there was one retail pharmacy to serve 8,650 people.³ According to the Canadian Pharmaceutical Association there are 674 communities in Canada which are served by only one pharmacy.⁴

The opinion was expressed by the Canadian Pharmaceutical Association that throughout the 1950's the development of large shopping centres, the growth of the self-service idea in selling and other modern merchandising practices have altered both the appearance and the method of operation of the drug store. In the face of these developments the independent druggist finds himself at a competitive disadvantage in many ways, and as a consequence there appears to be taking place a gradual concentration of ownership into fewer hands. The larger chains are said to be expanding their outlets and the smaller chains, possibly with ten or less stores, are steadily growing in number.⁵

The Canadian Pharmaceutical Association made the point that in the larger cities there are some areas which appear to be over-served from the standpoint of the number of outlets. The Ontario Retail Pharmacists' Association,⁶ the Pharmaceutical Association of the Province of British Columbia,⁷ the Manitoba Pharmaceutical Association and the Saskatchewan Pharmaceutical Association also expressed the opinion that some saving might be possible if dispensing were concentrated in larger pharmacies, but the latter two qualified their comments by saying that most customers want the services of a community drug store.⁸ To the extent that customers really desire the services of a community or neighbourhood drug store as indicated by their willingness to pay higher prices for drugs, such stores will survive.

¹ Transcript, *op. cit.*, May 10, 1962, Vol. 50, p. 9561.

² Restrictive Trade Practices Commission, *op. cit.*, p. 378.

³ The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 85.

⁴ *Ibid.*, p. 71.

⁵ *Ibid.*, p. 86.

⁶ The Ontario Retail Pharmacists' Association, *op. cit.*, p. 30.

⁷ The Pharmaceutical Association of the Province of British Columbia, brief submitted to the Royal Commission on Health Services, Vancouver, February 1962, p. 30.

⁸ Restrictive Trade Practices Commission, *op. cit.*, p. 392.

To the extent that customers wish to have drugs dispensed at the lowest possible cost, it will be in their interest to encourage the development of dispensaries with a large turn over, which among other things can fully utilize the services of the professional pharmacist.

In many European countries the organization of the distribution of drugs differs greatly from that on the North American continent, and does not rely primarily upon market forces to control the density and location of retail pharmacies. An alternative system is illustrated by Denmark where the number and location of pharmacies is rigidly controlled. The activity of the pharmacist is confined to pharmaceuticals and one pharmacy under these circumstances is able to provide whatever pharmaceutical services are necessary for every 13,000 persons.¹ Because of the much greater distances in Canada it would not be practical for Canada to operate on such a ratio nor do we necessarily wish to follow a system of rigid control and allocation. But our objective should be to aim at maintaining greater flexibility in our distribution system than has been the case so far. The following comment by the Dean of the Faculty of Pharmacy, University of Toronto, appears appropriate:

"Proposals are sometimes made that medicines should be purchased centrally and distributed by a government agency, or alternatively that distribution to patients be through dispensaries established in clinics or in health centres. All aspects of the provision of pharmaceutical benefits were considered in the United Kingdom by the Committee on the Cost of Prescribing appointed by the Ministry of Health in 1957 under the chairmanship of Sir Henry Hinchliffe, after the National Health Service had been operating for some eight years. In connection with government purchase and distribution the Committee reported, in part: 'the high cost of setting up such a service as well as the administrative expenses often associated with central organizations would almost certainly increase the cost of medicines rather than reduce it.' In regard to distribution through Health Centres the Committee stated, in part: 'If Health Centres were to take over N.H.S. dispensing, the patients or those who fetch their medicines would, in many instances, have to travel long distances. The alternative of small dispensaries as widely scattered as retail pharmacies would be hopelessly expensive . . . The large number of retail pharmacies is only economically possible because two-thirds of their turnover is obtained from ordinary business and only one-third from N.H.S.' The Committee, therefore, concluded: 'There is no satisfactory alternative to the present system of supplying National Health Service medicines through the established retail channels. If purchase and distribution of medicines were undertaken centrally or through Health Centres costs would increase.'"²

In our view it is in Canada's interest to make more effective and fuller use of professionally trained pharmacists and that this objective can be achieved by encouraging the development of high-volume dispensaries.

¹ *Ibid.*, p. 408.

² Statement by the Dean of the Faculty of Pharmacy, University of Toronto respecting certain opinions of the Faculty concerning Pharmaceutical Services under a Comprehensive Medical Care Plan, submitted to the Royal Commission on Health Services, Toronto, May 1962, pp. 2 and 3.

Another problem facing the retail pharmacist is the lack of standardization in marketing drugs in pre-packaged form leading to higher costs for the consumer and possible losses on the part of the pharmacist in cases where he is required to break large lots into smaller doses and where he cannot return the unused balance to the drug manufacturer once the drug has lost its therapeutical effectiveness. On this point the Select Committee of the Ontario Legislature suggested: "That a more rational standardization of packaging be considered. Pills to be packaged in standard quantities and liquids in standard size bottles to permit the medical practitioner to prescribe according to the size of the package available and thus reduce the cost to the patient and any loss to the pharmacist which may ensue due to splitting packages".¹

While the matter of standardization is generally one to be resolved between the drug manufacturer and the drug retailer, good common sense suggests that efforts should be made by these two groups to achieve increasing standardization in packaging and marketing of drugs to make it possible for the industry as a whole to pass on the resulting economic benefits to the consumer.

Foreign Control of the Industry

The Green Book refers to an address by John T. Connor, President of Merck & Co. Inc. on March 17th, 1960 which indicated that in 1959 the ten drug companies in the United States having the largest sales in order were: Lilly, Upjohn, Smith Kline & French, Cyanamid, Parke-Davis, Wyeth, Merck, Squibb, Abbott, and Pfizer.² These firms all have branches or subsidiaries in Canada. These 10 plus Frosst which is a Canadian company, and Horner and Ayerst which though originally Canadian companies are now also American subsidiaries, are the 13 largest firms in the ethical drug field in Canada (Connaught Medical Research Laboratories is not included since, though competing with commercial firms in some areas it is a non-profit organization). All 13 companies have annual sales in excess of \$4 million each and are the only ethical drug firms in Canada having sales of this magnitude.

The Clarkson Survey for the year 1960 covered 40 firms which reported sales of human pharmaceuticals amounting to \$108 million in value and representing the bulk of all ethical drugs sold in Canada. According to the Department of National Health and Welfare, of these 40, only 4 appeared to be Canadian-owned and controlled. The remainder are branches or subsidiaries of 28 American and 8 European companies.³

¹ Report of the Select Committee of the Ontario Legislature, *op. cit.*, p. 51.

² Green Book, *op. cit.*, p. 240.

³ Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

One of the consequences of the foreign domination of the Canadian drug manufacturing industry and at the same time a further measure of the degree of such dominance, is the extent to which drug patents are held by foreign firms. To answer a question in the House of Commons, the Patent Office compiled information about patents granted and compulsory licences issued for 14 important pharmaceutical products. The return compiled by the Patent Office is reported in the House of Commons Debates for February 10, 1960.¹ The 14 products were: nystatin, tyrothricin, neomycin, dihydrostreptomycin, streptomycin, tetracycline, oxytetracycline, meprobamate, chlorpromazine, chlorothiazide, chlorotetracycline, erythromycin, chloramphenicol, and penicillin. There were 395 patents granted which related to these 14 products. Of the 395 patents only 9, that is less than 2.3 per cent, were held by genuine Canadian firms. There were only three such firms. In addition there were only two other Canadian companies holding licences under patents. These related to 3 drugs and were owned by American firms.²

The dominance of the Canadian industry by foreign firms has a number of consequences. One of these is that the Canadian market tends to be supplied by subsidiaries or branches of foreign firms with basic drugs which they obtain from parent or related companies. As the Green Book points out, the fact that Canadian branches and subsidiaries rely so heavily on foreign sources of supply makes it necessary to be careful in appraising the reported costs of such firms.³ A corporation operating a wholly-owned subsidiary company will normally try to manage the affairs of both the parent and subsidiary so as to maximize profits. Considerations of efficiency may result in certain operations being handled by one firm for the group. Considerations relating to tax or tariff advantage may make it desirable for the supplying firm to take a large mark-up in some cases while in other cases it may be to the advantage of the international organization for the supplying firm to sell to related firms at prime cost so that the related firms take most of the mark-up. As a result the price charged by a parent to a subsidiary in the drug industry may be an arranged price in the sense that it may not be the same price which the parent would charge an independent firm.⁴ The true costs may be further obscured where the product purchased by the Canadian subsidiary or affiliate is in an unfinished state and for which there is no outside market by which the price charged to the subsidiary might be tested.

¹ See p. 929.

² Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

³ Green Book, *op. cit.*, p. 240.

⁴ *Ibid.*

DOMESTIC PRODUCTION AND IMPORTS

The Report of the Restrictive Trade Practices Commission indicates that in 1960 imports of drugs represented 17.5 per cent of Canadian domestic supply (technically "disappearance"). This is a decline from 20.2 per cent in 1955. Import figures include not only some finished dosage forms of drugs but medicinal chemicals and semi-manufactured drugs for further processing. The apparent share of the market accounted for by imports does not reflect the competitive impact of such imports which is in fact less than the figures indicate.¹

Statistics available are inadequate to gauge effectively the extent to which the Canadian market is supplied by ethical drugs manufactured in Canada for several reasons. First, we would require a different compilation of import figures followed by appropriate analysis. Secondly, we would require an acceptable concept of what is meant by "manufactured" in the drug field and have figures compiled accordingly. We need more knowledge in this field if appropriate policy decisions are to be made and we make recommendation to undertake studies.²

In the representations made to us by the Canadian Pharmaceutical Association a useful breakdown of the manufacturing process in the ethical drug industry was suggested. First, there is the extraction or synthesis of the medicinal chemical. Second, there is the purification of the crude drug still in bulk forms. Third, there is the fabrication of the individual dosage forms, which may or may not include the compounding of several active ingredients. Finally, there are the packaging and labelling procedures though these are not considered by the Association to be part of the real manufacturing process.³ In the Clarkson Survey in 1960, 81.5 per cent of the total sales volume was said to be manufactured and packaged in Canada, 11.8 per cent was said to be made outside Canada but packaged here, while 6.7 per cent was manufactured and packaged in other countries.⁴ This analysis does not distinguish between manufacture defined to include the fabrication of dosage forms, and manufacture defined to include the earlier steps mentioned above.

The manufacturers of medicinal chemicals are primarily concerned with producing the active ingredients that go into the compounding of pharmaceutical preparations. The Canadian Pharmaceutical Manufacturers Association acknowledged that the majority of these active ingredients, which constitute the bulk drugs which the ethical drug manufacturers in Canada

¹ As a matter of interest, exports in 1960 represented only 3.6 per cent of domestic shipments, a decline from 4.2 per cent in 1955. Restrictive Trade Practices Commission, *op. cit.*, p. 44.

² See Chapter 2, Recommendation 81.

³ Transcript, *op. cit.*, May 25, 1962, Vol. 60, p. 11425.

⁴ Canadian Pharmaceutical Manufacturers Association, *op. cit.*, p. 24.

formulate or compound into dosage form, have to be imported. It is also acknowledged that in some cases the active ingredients could be taken by the patient direct, but they must be completed, manufactured and placed in the dosage form.¹

In the production of medicinal chemicals the necessary equipment is expensive. The Canadian Pharmaceutical Manufacturers Association indicates that a large volume is required to make the installation of such equipment economic, and in most cases, the Canadian market alone is not big enough to justify the necessary capital investment. International companies have so far generally preferred to supply Canada with the medicinal chemicals from the United States, the United Kingdom, etc., where they have assured access to markets larger than the Canadian.² At the present time, according to professor J. L. Summers of the University of Saskatchewan there is only one antibiotic being produced in Canada.³ Merck, which used to manufacture fine chemicals in Canada, closed its plant, it is said purely on economic grounds. Similarly, at the end of World War II, penicillin production by the fermentation process was being carried on in Canada but it was subsequently discontinued.⁴

ADVERTISING AND PROMOTION

Ethical drugs are a unique group of commodities in that they may be referred to in three distinctly different ways: First, by its chemical name, secondly, by its "proper" name, and thirdly, by its brand name. We have defined these terms in Chapter 9.

In practice neither chemical names nor proper names are widely used in prescriptions. The percentage of all prescriptions for which preparations selling under their proper names were available on the Canadian market, is estimated to have been between 35 and 50 per cent in 1960 and may have reached 62 per cent in 1962. However, the Restrictive Trade Practices Commission concluded that the percentage of prescriptions with respect to which proper name drugs could conveniently be dispensed may have been as low as 18 to 20 per cent.⁵ There are few drug supply firms in Canada offering drugs by generic name. It was presented to us that the main ones were Empire Laboratories Limited of Toronto, Jules R. Gilbert Limited of Toronto and Starkman Chemists Limited of Toronto.⁶ The Alberta Phar-

¹ Transcript, *op. cit.*, May 18, 1962, Vol. 56, p. 10595.

² *Ibid.*, p. 10649.

³ *Ibid.*, May 25, 1962, Vol. 60, p. 11426.

⁴ Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 53.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 436.

⁶ The Government of the Province of Alberta, brief submitted to the Royal Commission on Health Services, Edmonton, February 1962, p. 108.

maceutical Association conducted a survey of 40 representative stores in seven centres in Alberta to determine the relative popularity of brand names in a total of 3,491 prescriptions. Of these, 3,119 or 89.3 per cent were written for brand name products, 243 or 6.7 per cent were written using generic terminology, and 129 or 4 per cent were compounded in the pharmacy and some of these may have been prescribed by generic name.¹ At our hearings in February 1962, the Alberta Pharmaceutical Association indicated that physicians in Alberta were still prescribing brand names over generic names in the proportion of 15 to 1.² Similar results were disclosed by surveys conducted by Prescription Services Inc. and by Drug Merchandising.³

The Select Committee of the Ontario Legislature concluded in its Report: "Some generic names are longer and more cumbersome than trade names and there is a preference on the part of the physician to prescribe by the trade name, although the teaching practice in medical and pharmacy faculties tends to encourage the use of generic names . . . Price differences between drugs marketed under generic names and drugs marketed under trade names were significant in some instances".⁴

The Select Committee further observed: "Not all drugs lend themselves to sale by generic name due to compound preparations which are a combination of several drugs and do not usually have a generic name. This limits the number of manufacturers who market the product and restricts competition".⁵

Other things being equal, the wider use of proper or generic names in prescriptions would carry with it certain advantages. It would mean that any one of the several brand names⁶ might be used to fill a prescription thus opening up at least the possibility of price competition. If appropriate safeguards are taken with respect to purity or potency of medications, the increasing use of proper name drugs could greatly reduce the number of products a retail pharmacist is obliged to carry, making it possible to reduce operating costs leading to lower prices. The point has been made that brand names in some cases are simpler and hence easier to remember. But against this, it may not be necessary for the physician to learn the various brand names but only the less numerous generic names. There is evidence that similar spelling or pronunciation in brand names may lead to confusion and that the use of brand names of the rarer type drugs which do not provide information with respect to the contents of the drug are not as helpful to

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 423.

² Transcript, *op. cit.*, February 13, 1962, Vol. 23, p. 5231.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 431.

⁴ Report of the Select Committee of the Ontario Legislature, *op. cit.*, p. 24.

⁵ *Ibid.*, p. 49.

⁶ The brand name of a drug as such does not signify purity, potency, etc. The name must be followed by its authority: British Pharmacopoeia, United States Pharmacopoeia, British Pharmacopoeia Commission, National Formulary, etc. The brand name simply reflects the reputation of the manufacturer.

prescribing physicians as more descriptive drug names. When drugs are called by their proper names, assuming that the proper names have been carefully chosen, the relationship among the drugs is clear. Examples of properly named related drugs are quoted by the Restrictive Trade Practices Commission: tetracycline, oxytetracycline, hydrochloride, chlortetracycline, and dimethylchlortetracycline.¹

We are facing in Canada a number of difficulties in an effort to use increasingly proper name prescriptions. The main obstacle appears to be uncertainty about the purity or potency of drugs carrying only generic names. At the present time in the absence of any indication in a prescription using generic terminology, that the product of a generic manufacturer should be dispensed by the pharmacist, he is free to fill it with a brand name. A survey conducted by Drug Merchandising and published in July 1962 established that in 62 per cent of the cases where generic prescriptions were written, druggists in fact filled them with brand name products.² This in part explains the limited results achieved by an Act of the Province of Alberta which was proclaimed on April 5, 1962 which permitted druggists to substitute a generic for a brand name in a prescription unless substitution was specifically forbidden by the physician. Although only a short time elapsed between the passage of the Act and the time when witnesses appeared before us to speak on this point, the Canadian Pharmaceutical Association expressed the opinion that there had been no change whatever in the prescribing habits of 95 per cent of the physicians in Alberta.³ This opinion was shared by the Canadian Pharmaceutical Manufacturers Association who said that the Act had not made a measurable difference in the prescribing habits of physicians or dispensing habits of pharmacists.⁴

As suggested above, the wide use of brand or trade names plays an important part in modifying the competition which exists among drug firms. Product differentiation here is of much greater significance than it is in the case of those products which the consumer can choose for himself. In other circumstances, price can be used as an effective competitive weapon for winning sales from a highly-advertised rival product. This is not generally so in the drug industry. Instead of using one trade or brand name for its line of products, as for example a soup company does, a drug firm usually uses a different trade name for each particular drug. This is a selling practice which is unique to the drug industry. The main purpose is to displace the chemical or proper name.⁵ If this is done successfully and physicians generally adopt the trade name in writing their prescriptions, a rival product is un-

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 446.

² *Ibid.*, p. 432.

³ Transcript, *op. cit.*, May 25, 1962, Vol. 60, p. 11450.

⁴ *Ibid.*, May 18, 1962, Vol. 56, p. 10619.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 489.

likely to make any headway using a price appeal. The only alternative is a promotional campaign to push another trade name, directed to medical practitioners.

In the 40 companies covered in the Clarkson Survey of 1960, a breakdown was provided of the selling expenses involved in medical promotion and detailing on the one hand, and direct selling expenses other than medical promotion and detailing on the other. This survey concerned total sales of human pharmaceuticals (that is, it did not include veterinarian pharmaceuticals or proprietary medicines) amounting to \$108 million. The breakdown is given hereunder:

<i>Medical Promotion and Detailing Expenses</i>		'000
Medical Exhibits	\$	206
Medical and Pharmaceutical Journals		2,030
Direct Mail		3,048
Samples		3,953
		<hr/> 9,237
Detail men—Salaries		6,640
Detail men—Travel and other Expenses		3,099
		<hr/> 9,739
Total Medical Promotion and Detailing Expenses		<hr/> 19,000
<i>Direct Selling Expenses</i>		
Donations		192
Sales Representatives		3,735
Expenses of Sales Representatives		1,743
Other Selling Expenses such as price lists, institutional advertising, displays for drug stores, etc.		6,882
Total Direct Selling Expenses	\$	<hr/> 13,000

The cost of all medical promotion and detailing, and of direct selling expenses for the 40 companies therefore amounted to \$32 million, or approximately 30 per cent of total sales.¹

The medical profession has been quite specific as to the limited usefulness of promotional efforts on the part of the drug industry. For example in the Report of the Committee on Pharmacy of the Canadian

¹ Answers to Specific Questions received from the Royal Commission on Health Services and provided by Canadian Pharmaceutical Manufacturers Association, p. 5.

Medical Association to the Annual Meeting of the Association in June, 1960, the usefulness of direct mailing by drug distributors as a source of reliable information on the efficacy of drugs was questioned:

"142. The general situation with regard to drugs should be a matter of concern to this Association. New drugs are being introduced at a rate of more than one hundred per annum, and new combinations of drugs are being marketed in a way which creates confusion. Some of the new compounds represent real advances in therapeutics, while others have very little advantage over the older agents which they supplant so rapidly. When new agents are introduced at this rate there is no opportunity for sober evaluation of their merits or publication of the results of such studies before they are widely advertised to the profession. Nonetheless, the sale of most of these drugs is directly due to the fact that they are prescribed by doctors. Your Committee feels that there are two aspects to this problem. The first requires that the individual physician consider carefully the evidence upon which the claims for new drugs are based, and the actual advantage (or disadvantage) likely to be enjoyed by the patient for whom he contemplates prescribing them. The second has to do with the provision of greater facilities for clinical trials of new drugs and their publication by institutions capable of doing the work properly, possibly with the support of a pooled fund to which the pharmaceutical manufacturers would be willing to contribute.

"143. The cost of drugs has been a matter of much discussion in recent months. There is no doubt that the pharmaceutical houses have made many contributions in past years to our ability to alleviate illnesses which in the aggregate represent an almost incalculable economic and humanistic gain to our community. There is some evidence to suggest that the return which they are receiving on their original investment is excessive. Your Committee is not in possession of sufficient factual evidence to pass judgment on this question, but there is no doubt that it is a matter which should concern this Association greatly. Many of the advertising practices of the drug houses appear wasteful and unprofessional. This applies particularly to direct mail advertising to the doctors. This has reached the point where it is nothing more than a nuisance to its recipients and your Committee would recommend that representations be made to the Pharmaceutical Manufacturers Association that it should be discontinued, and the saving passed on to our patients".¹

In a letter addressed to the Canadian Pharmaceutical Manufacturers Association drawing the Association's attention to the "nuisance" effect of promotional drug literature, Dr. A. D. Kelly, General Secretary of the Canadian Medical Association, stated:

"You will observe that the matter requiring the attention of the Association relates to the apparent wastefulness and cost of direct-mail advertising. I know of no single item of relationship with our friends in manufacturing pharmacy which produces more irritation in the minds of doctors than the receipt of the voluminous mail which arrives every day. We have noted the recent practice of certain members of your Association to utilize parcel post to deliver large packages, and I assure you that the reaction is most unfavourable.

¹ Canadian Medical Association, "Report of the Committee on Pharmacy", Transactions of the Ninety-Third Annual Meeting, *Canadian Medical Association Journal*, Vol. 83, September 3, 1960, p. 505.

"I believe that I correctly portray the attitude of most doctors to the flood of direct mail advertising in the following summary:

- (a) It is so voluminous that only the most conscientious recipient opens each piece before consigning it all to the waste basket.
- (b) Most of it constitutes outstanding examples of the printer's and lithographer's art which conveys the impression of great expense and consequent wastefulness.
- (c) It appears so expensive that doctors feel that it may contribute materially to the cost of prescribed drugs to the patients.
- (d) It produces in the minds of many doctors an unfavourable image of the firm which sponsors it.

"I believe that it may be possible to adduce arguments to refute each of the impressions which I have listed, but I would urge that you do not undertake to do so. In sum, professional opinion is most unfavourable to direct mail as currently carried out, and I believe that the Canadian Pharmaceutical Manufacturers Association should recognize this and take steps among its member companies to curtail or eliminate it. We have noted encouraging signs that certain companies have voluntarily discontinued this medium and I believe that it will be held to their credit.

"I realize that it is difficult for an Association such as yours to influence decisions of autonomous and competitive member companies, but I believe that it will be worth the effort to correct the current situation. A successful outcome would, in my view, go a long way towards enhancing the "image" of Canadian pharmaceutical manufacturing in the minds of my colleagues. The C.M.A. stands ready to assist your endeavours and to announce to the profession the progress which you may make."¹

Evidence was presented to the Select Committee of the Ontario Legislature indicating that the average proportion of advertising and promotion costs contributed 29.2 per cent to the total and that the proportion was reported as high as 35 per cent by one manufacturer.² The Committee observed:

"These methods of promotion are admittedly costly, but manufacturers consider this expense essential and emphasize that they would gladly reduce expenditures on promotion if a more economical method of effecting sales could be devised.

"Some medical representatives felt that much of the large volume of direct mail literature distributed went unread and was simply discarded, but most agreed that samples were retained and used for the benefit of needy patients. On the whole, doctors expressed the view that the system of transmitting information on drugs from the manufacturer to the medical practitioner could be improved."³

The Advisory Committee on Medical Care to the Government of Saskatchewan came to the conclusion:

"We view much of the advertising and promotional activities as wasteful and extravagant. We are strongly of the opinion that unless drug manu-

¹ *Ibid.*, p. 553.

² Report of the Select Committee of the Ontario Legislature, *op. cit.*, p. 24.

³ *Ibid.*, p. 25.

facturers take the lead in a program sponsored by their own trade association to reduce voluntarily their large, extravagant and wasteful expenditures on promotion, it may very well be necessary to limit such expenditures by stipulating the size of expenditures on advertising and promotion (on proportional basis) which would be accepted for Income Tax purposes as a legitimate expense of doing business. Such a provision may seem discriminatory but may offer a workable and effective solution".¹

Even some representatives of the drug industry admit that amounts spent on advertising and promotion are excessive. The following evidence was given to the Restrictive Trade Practices Commission by the President of Nordic Biochemicals Limited:

"The CHAIRMAN: Mr. Antoft, in your brief you make a number of comments on advertising and promotion which seem to indicate that you don't just like the extent to which these things were carried on. I wonder if these comments have in your view—this is what I want you to answer—whether you think this is putting it too strongly, whether you feel the manufacturers have got into a kind of unfortunate rat race in having to have more and more detail men, more and more fancy advertising? Would that be putting your views too strongly?

"Mr. ANTOFT: I don't think that would be putting it too strongly. I deplore this. I think it has developed into a rat race. I hope our industry together with the medical association will some day, in the not too distant future, will be able to find the formula by which a serious manufacturer can get information across to the doctor without this tremendous wastage of everybody's materials and time and money. I think this is an area for the industry and for the medical profession to arrive at some solution or to get closer to a rational approach to this".²

Evidence was given to the Restrictive Trade Practices Commission that in the United States some 4,500 pieces of direct mail advertising are received by physicians on an average in the United States each year, and it was argued that the bulk of it cannot be read and is wasteful. The Canadian Pharmaceutical Manufacturers Association disputed these figures, at least so far as they apply to Canada, and stated that in Canada a physician receives on average only 1,761 pieces of literature from pharmaceutical houses annually.³ Even this number is so large as to make it practically impossible for every physician to read carefully all the literature he receives.

As far as detail men are concerned, the Canadian Pharmaceutical Manufacturers Association indicated that in 1962, 49 of the Association's member companies employed a total of 1,647 detail men and salesmen. Eight firms employed between 62 and 70 sales representatives each. Of the total it is estimated that about 1,500 spend all or part of their time calling

¹ *Final Report of the Advisory Planning Committee on Medical Care to the Government of Saskatchewan*, September 1962, Regina: Queen's Printer, 1962, p. 105.

² Restrictive Trade Practices Commission, *op. cit.*, p. 223.

³ *Ibid.*, p. 278.

on medical practitioners.¹ (The Clarkson Survey indicated that on the average 36 per cent of the time of detail men is spent in direct selling, that is in work other than detailing physicians, such as visiting pharmacists, hospitals and other duties.)² It is estimated that there are 17,900 medical practitioners in Canada.³ This means that there is one detail man for every 12 doctors practising medicine in Canada. It also means that the \$19 million spent on medical promotion and detailing alone, represents over \$1,060 for each doctor each year.⁴

The Canadian Pharmaceutical Manufacturers Association argues reasonably enough that the drug companies don't spend money unnecessarily.⁵ The Association drew support for this argument from a recent study conducted by International Surveys Limited of Montreal which determined where physicians first learned about the new products.⁶ Detail men were by far the most important source of such information. Direct mail was more important than any of the remaining sources. The Canadian Pharmaceutical Association alluded to the heart of the matter when it recognized that some promotion is wasteful, but argued that drug firm A must continue unless drug firm B also stops.⁷ In these circumstances the efforts of competing firms tend to cancel each other out and the result of increasing competition is simply to raise costs.

Again the evidence given to the Restrictive Trade Practices Commission by the President of the Nordic Biochemicals Limited is particularly relevant:

"When Nordic Biochemicals Limited was established in 1951, we approached our responsibilities with what appears in retrospect to be naive idealism. We assumed that all that was necessary to thrive and expand in the Canadian drug manufacturing industry was to offer the best possible product at a reasonable price, in the expectation that within a very short time we would be operating at capacity. It was thought that advertising could be held to simple announcements in one or two of the main medical journals, announcing that our products were available. No provisions for direct mail promotion, an army of detail men, or huge sampling programs were envisaged. While this philosophy was operative, the company teetered on the brink of disaster, but only with reluctance and by degrees did we accept the 'facts of life', and the company finally began to prosper. It was rapidly discovered that although doctors publicly deplore the mass of direct mail literature, a sales volume on practically any product could be created by advertising it by mail providing it is done persistently and massively. Detail men are an expensive method of securing sales, but without them, cobwebs grow on the order desk.

¹ Answers to Specific Questions received from the Royal Commission on Health Services and provided by Canadian Pharmaceutical Manufacturers Association, p. 3.

² *Ibid.*, p. 8.

³ Transcript, *op. cit.*, May 18, 1962, Vol. 56, p. 10612.

⁴ See also Chapter 17.

⁵ Transcript, *op. cit.*, p. 10610.

⁶ Canadian Pharmaceutical Manufacturers Association, *op. cit.*, p. 83.

⁷ Transcript, *op. cit.*, May 25, 1962, Vol. 60, p. 11435.

Thirdly, in order to detail, a representative must usually 'bribe' his way into the doctor's presence by the offer of free samples in generous volume. The drug house who neglects any one of these three sales methods invites its own decline . . ."¹

A final important aspect of this subject is the fact that adequate pharmacy distribution must parallel the promotional campaign to physicians. This means advertising and promotion directed to the pharmacist on a substantial scale. Otherwise when a prescription is written for a particular product, if the prescribed drug is not stocked locally, both the physician and the druggist are likely to be dissatisfied with the services provided by the drug company involved.²

We conclude: The evidence submitted to us confirms that a good deal of promotional effort in the drug industry is wasteful. Still, this state of affairs is likely to continue as long as the leading drug manufacturers and distributors fear that a reduction on their part of unnecessary promotional expenditures would mean a loss of business to a competitor who continues with such wasteful expenditures. Hence, the solution to the problem is to encourage *all* drug manufacturers and distributors to reduce promotional and advertising expenditures to more reasonable levels and we submit recommendation to this effect in Chapter 2.³

RESEARCH AND DEVELOPMENT

In some countries including the United States commercial drug firms have been responsible for significant medical research. There is more controversy over what proportion of the research they do is relevant to progress in medicine since relatively few basically new products have been developed in the post-war period. Skilled chemists have successfully produced compounds closely related to known drugs and having comparable activity. We found that a good deal of the research done by commercial drug firms is directed towards what amounts almost to duplication of existing drugs, in effect inventing around other people's patents. Frequently the new products do not have important advantages over their predecessors and may have disadvantages. Of the 5,727 new pharmaceutical products introduced on a national scale in the United States between 1948 and 1959, 2,795 were simply mixtures of two or more active ingredients, 1,356 were already on the market in other administrative forms, 1,085 were new brand names for existing drugs and only 491 were new chemical entities.⁴

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 188.

² *Ibid.*, p. 227.

³ See Chapter 2, Recommendation 64.

⁴ *Ibid.*, p. 185.

It is unnecessary for our purposes, however, to resolve any issues over the proportion of the research activity of commercial drug firms which is significant for medical progress because in Canada it is clear that important research is not done by the drug companies. The Restrictive Trade Practices Commission reported upon a survey conducted by the Canadian Pharmaceutical Manufacturers Association covering the research activities of 22 Canadian drug companies in the years 1958 and 1959. Although other amounts were claimed as having been spent abroad by parent companies on behalf of Canadian subsidiaries, the 22 companies actually spent for research purposes in Canada \$2.2 million in 1958 and \$2.5 million in 1959.¹ The Canadian Pharmaceutical Manufacturers Association conducted a similar survey covering the year 1960. This survey embraced 37 companies which account for the bulk of ethical drugs sold in Canada. The total amount actually spent in research in Canada by these companies was \$3.3 million or 2.8 per cent of total sales. Again certain sums were claimed for research done elsewhere.

The Select Committee of the Ontario Legislature arrived at a slightly higher proportion than was presented to us by the Canadian Pharmaceutical Association. Still, the Committee concluded: "The consequences of research expenditures as a justification in the cost of prescription drugs has, in our estimation, been somewhat overstated. Not all firms undertake to do research and, in Canada, research is largely confined to two or three of the major manufacturing firms, institutions like Connaught and universities. Thus, a ratio is difficult to determine but the average spent on research, according to the report prepared by Mr. A. J. Little and attached as Appendix D (Schedule 3), is only 3.8%".²

Other measures of the significance of the drug research actually conducted in Canada by commercial drug firms are available. Attention may be directed to the relative importance of the contributions made by the agencies which provide funds for medical research. In the main those are the Federal Government through the National Research Council, the Defence Research Board, the Department of Veteran's Affairs, and the Department of National Health and Welfare; certain provincial governments; voluntary health agencies; private research foundations; commercial firms; universities and hospitals; and foreign sources.³ The relative importance of these agencies as sources of funds is available for the fiscal year 1955-1956, when the Federal Government provided \$4,455,000 or 48 per cent of the total; provincial governments \$345,000 or 4 per cent; voluntary bodies \$845,000 or 9 per cent; commercial firms \$1,600,000 or 17 per cent; universities (from local

¹ *Ibid.*, p. 74.

² Report of the Select Committee of the Ontario Legislature, *op. cit.*, p. 40.

³ Green Book, *op. cit.*, p. 120.

funds) \$1,350,000 or 15 per cent; and foreign agencies \$595,000 or 6 per cent of the total.¹

Opinions about the amount of research and development work conducted by the ethical drug companies in Canada have been expressed by a number of qualified observers. The brief of the Faculty of Pharmacy of the University of Toronto indicated disappointment at the lack of support for the Faculty's research programme by the pharmaceutical manufacturing industry. Only one company had provided any scholarship or research grants for pharmaceutical research in the University of Toronto.² This one company had established an annual \$1,500 scholarship for five years commencing in 1958. The Committee for the Furtherance of Creative Research in the Pharmaceutical and Allied Industries which represents 27 Canadian drug companies while proposing measures to change the situation, flatly told us that "very little research is done in Canada in drugs".³ Dr. L. B. Pett, Principal Medical Officer for Research Development, Department of National Health and Welfare, expressed the opinion that the research carried on by commercial drug firms would form a minor part of total medical research in Canada, and that the chief centres of research were first the medical faculties of the universities, second the teaching hospitals, and third a few special research institutions like the Banting and Best Medical Research Institute and the Charles H. Best Institute in Toronto.⁴ The Restrictive Trade Practices Commission concluded that:

- "1. Canadian patents on drugs are secured to an overwhelming extent by patentees resident in foreign countries. Research in the drug field carried on by large drug companies on this continent is done largely in the United States . . .
- "2. In the foreseeable future it seems very unlikely that the Canadian subsidiaries of American parent companies will establish important research facilities in Canada . . . Although expenditures on research by Canadian subsidiaries of American companies have increased in recent years, this has been due largely to recent regulations of the Food and Drug Directorate which require an increasing amount of clinical testing of new drugs in Canada prior to approval by the Directorate.
- "3. The main Canadian research contributions that have been made in the field of drugs have resulted almost entirely from non-commercial activities at places like the Connaught Laboratories".⁵

In the light of what has already been said we do not think there can be any real dispute about the fact that the research conducted in Canada

¹ *Ibid.*, p. 124.

² The University of Toronto also does some research work for the Connaught Medical Research Laboratories.

³ Transcript, *op. cit.*, June 2, 1962, Vol. 66, p. 12567.

⁴ Restrictive Trade Practices Commission, *op. cit.*, p. 72.

⁵ *Ibid.*, pp. 519-520.

attributable to the commercial drug firms has been modest. If further confirmation of this is required it appears to us to be amply provided by the statements which many of the companies themselves made to inquiries by the Director of Investigation and Research, Combines Investigation Act. Returns of information were made to the Director in May and June 1960. Some of these read in part as follows:

Ames Company of Canada Ltd.

"... the Company did not directly expend any amounts for research during 1959."¹

Cyanamid of Canada Limited

"No research programme is carried on by the Company in Canada."

Dymond Drugs Ltd.

"This company does no research."

Eli Lilly and Company (Canada) Limited

"There is no research programme conducted in Canada except that we have many doctors co-operating in the assessment of new drugs through a clinical trial programme."

G. D. Searle & Co. of Canada Limited

"... there are no grants made at present by the Canadian company, although it is possible some awards are made by the parent company which are not charged to this operation."²

Parke-Davis & Company, Ltd.

"Subject company does not itself carry on directly any research programs in Canada, nor make direct expenditures or grants therefor."

Hoffman-La Roche Limited

"In the Roche world wide organization, basic chemical and pharmacological research is conducted at three main centres: Switzerland, United States and England."³

Poulenc Limitée

"Nous n'avons aucun programme de recherches proprement dites au Canada, si on entend à ce propos des recherches ayant pour but de découvrir de nouveaux médicaments."

Ciba Company Limited

"The Company contributes to the Research activities of its parent Company, such contributions being calculated as a percentage of sales."

Abbott Laboratories Limited

"All research is done by our parent Company in the U.S."⁴

Pfizer Canada

"Pfizer Canada did not itself carry on any research."

Burroughs Wellcome & Co. (Canada) Ltd.

"No research programme was carried out in Canada."⁵

Winthrop Laboratories of Canada Ltd.

"... no basic research is done in Canada."⁶

¹ Green Book, *op. cit.*, p. 127.

² *Ibid.*, p. 128.

³ *Ibid.*, p. 132.

⁴ *Ibid.*, p. 133.

⁵ *Ibid.*, p. 134.

⁶ *Ibid.*, p. 135.

These particular companies have been quoted simply to show what appears to be a widespread condition with respect to the research being done by the drug manufacturing industry in Canada. Some of these companies do carry on clinical testing programmes which have not been mentioned. In addition there are a few companies which undertake research programmes on a more substantial scale.¹

The Select Committee of the Ontario Legislature commented in its Report: "The firms conducting research programmes alleged that research is vital in order to enable them to compete with other firms, and such research programmes are ostensibly costly. There are elements of risk involved in research since not all research efforts are fruitful and frequently a better drug may be produced by another firm; but the costs incurred are, of course, reflected in the price of the products".²

We agree with the claim that research is vital to progress in medicine and that research in the drug field carried out by commercial companies can yield beneficial results. This would be particularly true in countries like the United States and the United Kingdom where large amounts are spent on drug research by private industry. But this is not the case in Canada where expenditures on drug research by commercial companies are comparatively modest and where few significant results have so far been achieved. This state of affairs in Canada leads us to the conclusion that if the existence of patents on drugs contributes to a substantially higher level of drug prices than would exist in the absence of such patents, it is difficult to see with respect to the Canadian drug industry, that the patent system can be defended on the usual grounds that it is necessary to provide incentives for research.

The Canadian Federation of Agriculture suggested that since Canadian drug companies do not add much to the volume of research done in Canada, we have little or no stake on research grounds in perpetuating the present system of distribution. The Federation suggested further that it would be hard to conceive of a more expensive way to get research done.³ Extended, the argument would be that if the patent system costs the Canadian public in the form of higher drug prices, anything more than say three million dollars, it is a bad bargain because the drug companies add less than this amount to the research done in Canada. It appears that Canada, a small country where most of the significant pharmaceutical research is done by other than the drug companies, has copied an institutional arrangement which can only be appropriate to a country like the United States where the higher prices which the patent system permits, in fact supports research by the industry on a substantial scale. It is with these considerations in mind that

¹ See also Chapter 17.

² Report of the Select Committee of the Ontario Legislature, *op. cit.*, p. 40.

³ The Canadian Federation of Agriculture, brief submitted to the Royal Commission on Health Services, Ottawa, March 19, 1962, Appendix C.

we have made suggestions with respect to changes affecting patents and trademarks of pharmaceuticals in Chapter 2.¹

Our experience has been that the development of drug research in Canada has relied heavily on public support and this situation is likely to continue. In fact we feel strongly that a good deal more research work should be done in Canada in the basic sciences as well as in the applied field to enable Canadians to obtain the benefits that accrue from systematic and advanced drug research.

Considering Canada's resources, we should concentrate our drug research in special fields where Canadian scientists and research scholars have particular proficiencies. In this area our scientists should be able to have access to adequate facilities and funds so that they can do their work effectively and unhampered by commercial considerations.

To achieve this objective it will be necessary to develop a long-term and co-ordinated programme of drug research in Canada with the Federal Government providing a substantial share of the cost of this programme. The proposed Health Sciences Research Council would be the appropriate agency to undertake the task of planning and co-ordinating a drug research programme and distribution of the necessary funds.²

PHYSICIAN AND DRUG PRESCRIPTION

The great advances that have been made in the last two decades in the development of new drugs to which we have referred earlier have conferred many benefits on the physician and the patient alike. The physician was able to increase his productivity and with it his income. The patient was able to get well sooner, avoid more illnesses and get a higher quality of medical services.

But, the great advances made in drug research and their application to the health sciences have created new problems for the medical profession. An increasing number of physicians with busy practices have found it difficult to keep up fully and currently with the therapeutic qualities of the mounting flow of new drugs, many of which were really not new but consisted of different combinations of ingredients producing similar therapeutic effects or similar ingredients marketed under different trade names. Pharmaceutical knowledge acquired by physicians at medical schools has tended to become obsolete rather quickly in the last two decades.

In the absence of an up-to-date Canadian Formulary and an authoritative current drug information service, physicians had to rely increasingly on the advertising and promotional literature supplied to them by drug manu-

¹ See Chapter 2, Recommendations 66-70.

² See Chapter 2, Recommendation 80.

facturers which, because of commercial interests involved, often make conflicting claims. Many physicians endeavour to keep up-to-date with pharmaceutical advances by reading objective articles in professional journals, attending medical and scientific conferences, consulting specialists in the pharmaceutical fields, etc. The extent of such efforts depends on individual initiative, sense of responsibility and time available for study and search for new knowledge.

The problem facing the physicians in Canada was put in these terms by the Select Committee of the Ontario Legislature:

"... a number of opinions were expressed that one of the main difficulties facing doctors was the lack of impartial information dealing with drugs, and medical witnesses indicated that they would welcome an independent source giving practical and unbiased guidance on new drugs. Some medical men regarded with suspicion information emanating from the manufacturers as being possibly exaggerated and biased".¹

Many physicians who endeavour conscientiously to keep up with medical advances and efficacy of new drugs coming on the market find it difficult to learn more about the costs of drugs in cases where alternative pharmaceuticals can be used to achieve the same therapeutic result.

Most physicians realize that proper name drugs of the same or similar therapeutic qualities may be considerably cheaper than brand name drugs' prescriptions. But, because of the confidence they have in the integrity of certain manufacturers, physicians are inclined to prescribe frequently drugs distributed by these firms rather than take what they might consider a "chance" with generic type drugs of uncertain quality. In some cases where two brand name drugs of identical therapeutical value are available, the physician may prescribe the product of the drug supplier that he is more familiar with even though this may be the higher priced product of the two.

We are in sympathy with the plight of the practising physician who, in many cases, is overworked in looking after patients and overwhelmed by the persuasive efforts of drug manufacturers and their detail men. How can he, without some help and a systematic effort, keep up continuously with advances in medical science, new and improved drugs coming on the market and the question of costs of drugs?

The physician's first obligation is to his patient. He wants to select the best drugs he can find to get his patient well as soon as possible. Efficacy and quality of drugs are his primary considerations. Costs of drugs may be a distant secondary matter. But, when a comprehensive drug programme is undertaken in Canada, costs of such a programme will assume greater importance than they have in the past. As explained in Chapter 2, we suggest that the cost of a drug programme be paid in part by contribution of the patient and in part out of general revenue. It is our concern

¹ Report of the Select Committee of the Ontario Legislature, *op. cit.*, pp. 19-20.

for both the taxpayer and the consumer that prompts us to emphasize the need for economy and the necessity to assist the medical profession to tackle more effectively the problems it faces in making the most judicious and beneficial use of pharmaceuticals in the best interest of their patients.

Here are some of the problems which the medical profession faces as observed in the United States:

"The life-span of the average new drug is said to be 2-5 years. The turnover has been running at a pace to overwhelm the competence of the average practitioner. In most cases his chief source of information comes from the promotional activities of the drug houses. If the druggist no longer fabricates prescriptions, it is because the average doctor no longer writes them; he prescribes prefabricated compounds, and he prescribes them by a brand rather than the generic name.

". . . The pressure to 'educate' the doctor regarding the attributes of new products is vigorous and relentless. Evidence at the 1959-60 Senate antitrust hearings on the drug industry indicated that it spends about a fourth of the sales dollars on promotion—about \$4,000 a year per doctor." . . . "Some 15,000 'detail men' or sales representatives visit doctors continuously—about one for every 10 physicians in private practice.

"A new product is often introduced with a 'blitz' and as many as 10 million pieces of mail have been used to launch a single product. According to Dr. William Bean of Iowa State University's School of Medicine: 'The richest earnings occur when a new variety of drug is . . . released.' . . . According to Dr. Solomon Garb of Albany Medical College, drug advertising is clearly exerting unprecedented influence on the physicians' prescribing, much of it unfavorable.' In support of his contention, he cites five other medical educators."¹

Similar problems have been encountered in the United Kingdom. The Hinchliffe Committee appointed in 1957 by the Minister of Health to investigate factors contributing to the high cost of drugs made a number of recommendations including:

1. that medical schools expand their courses on the economics of prescribing;
2. need for systematic post-graduate instruction of general practitioners in pharmacology and therapeutics;
3. that physicians prescribe by generic rather than brand name; and
4. that appropriate professional bodies be asked to take responsibility for a new journal for the medical profession to distribute up-to-date information about new drugs and preparations and the results of clinical trials.²

In the United States numerous proposals have been made to cope with some of the problems which we have outlined above. They include:

¹ Somers, Herman M., and Somers, Anne R., *Doctors, Patients, and Health Insurance*, The Brookings Institution, Washington, D.C., May 1961, pp. 96-97.

² Final Report of the Committee on *Cost of Prescribing*, Ministry of Health, London: Her Majesty's Stationery Office, 1959, pp. 6 and 41-48.

(1) rigorous and systematic drug evaluation by the industry itself, the medical profession, and/or medical schools; (2) education of physicians with respect to the drug industry and its products; (3) emphasis on formularies and prescription by generic name; and (4) strengthening of the Federal Drug Administration in the exercise of its existing authority and the expansion of authority to include: (a) unified and continuing regulation of drug advertising and promotion, (b) evaluation on the basis of efficacy as well as safety, and (c) continuous inspection of drug manufacturing on the premises.¹

As far as conditions in Canada are concerned we believe it to be important in the interest of good medical practice to leave the judgment as to what drugs may be prescribed in a particular illness to the practising physician and where necessary in consultation with professional experts, particularly in the pharmaceutical field. At the same time it will be necessary for the medical profession to do all it can to keep up with the fast moving developments in the drug field including understanding of some of the economic questions involved. To achieve this objective it may be necessary to take the following five measures:

1. To strengthen the courses in pharmacology taken by medical students to include among other things instruction in the economics of prescribing including an examination of comparative costs of drugs with similar therapeutical quality and efficacy.
2. To provide short refresher courses dealing with pharmacology for practising physicians.
3. To encourage the medical and pharmacy schools to do more extension work with physicians in the field of drug evaluation, therapeutics, etc.
4. To provide professional aids to enable physicians to keep up with new developments in the drug field including a Canadian Formulary and a periodic up-to-date drug information service.
5. To provide machinery comprising representatives from the medical and pharmaceutical professions and agencies concerned with the administration of a drug plan to minimize cost of prescriptions either in terms of over prescribing or in terms of prescribing high priced drugs where lower priced drugs would serve the same purpose adequately in the best judgment of the medical profession.²

¹ Somers, Herman M., Somers, Anne R., *op. cit.*, p. 101.

² The Advisory Planning Committee on Medical Care, in making its report to the Government of Saskatchewan, came to a similar conclusion and we quote: "We also consider it important to suggest that any method of cost-sharing with patients should be combined with a system of rules relating to the length or duration of drug therapy to be prescribed on new prescriptions, and to the number of times the prescription may be repeated". (Final Report of the Advisory Planning Committee on Medical Care to the Government of Saskatchewan, Regina: Saskatchewan, September 1962, p. 110). See also Chapter 2, Recommendation 60.

Drug Costs and Prices

This chapter deals with the economic and institutional aspects of costs and prices of drug prescriptions sold in Canada. We examine the reasons why Canadians pay as much as they do for drugs and we present the effect that certain legislative enactments have on drug costs and prices.

We analyse first the various items which enter in the cost of producing and distributing both domestic and imported drugs.

COMPONENTS OF PRICES AND COSTS

Manufacturing

The Canadian Pharmaceutical Manufacturers Association provided us with a breakdown of the main components of cost in the drug industry,¹ plus a comparison of the same components for all manufacturing industry. The figures for the drug industry are those from the Clarkson Survey covering 40 companies representing the bulk of the ethical drug industry, with net sales of \$126 million in 1960. For purposes of this analysis sales of veterinary pharmaceuticals, proprietary medicines, and other products were not subtracted from the total sales figures of the drug companies.

There are certain differences between these columns on which our analysis up to this point already throws some light. It will be noted that the cost of materials in the drug industry is substantially below that for all manufacturing in spite of the fact that packaging materials, which are important in the drug industry, are included in this cost component. While material costs are less, "other expenses" in the drug industry are very much more than they are in all manufacturing and this is not surprising since this item includes

¹ *Canadian Pharmaceutical Manufacturers Association*, brief submitted to the Royal Commission on Health Services, Toronto 1962, p. 37. The percentage distribution shown above is within a portion of a percentage point to the per cent distribution shown in the Report of the Select Committee of the Ontario Legislature on *The Cost of Drugs*, *op. cit.*, p. 44.

selling expenses not already accounted for in "wages and salaries" or elsewhere. It will be noted that depreciation is substantially less in the drug industry and this reflects the fact that there is little manufacture of medicinal chemicals, or other activity requiring expensive plant or equipment in the Canadian drug industry, which is mostly concerned with the preparation of dosage forms.¹

<u>Cost Component</u>	<u>Pharmaceutical Industry Percent</u>	<u>All Manufacturing Industry Percent</u>
Wages and Salaries	24.3	21.5
Employee Benefits	1.9	1.7
Materials (including packaging materials)	28.7	44.5
Excise and Sales Tax....	6.2	4.7
Other Expenses (including sell- ing expenses not already ac- counted for)	26.2	15.2
Depreciation	1.7	4.1
Taxes on Income	5.5	3.9
Profit	5.5	4.4
	<hr/> 100	<hr/> 100

Raw Materials

For the large ethical drug manufacturer in Canada, the cost of raw materials may involve the purchase of products ranging from the completely finished dosage form already packaged for sale to the bulk medicinal chemicals which need further refinement or formulating before being processed into dosage forms and packaged. It is necessary to be cautious about the importance to be attached to raw material costs. In some cases of course no further processing of any kind is required and the cost to the Canadian company of the "raw material" is significant. In other cases the difference is less meaningful. For instance, we were referred to the cost of water and its price when used for injection purposes. Water is probably the cheapest of all raw materials and it is estimated that the amount of tap water used in one injectible container costs only .000004 cents. The tap water of course must have inorganic impurities removed, it has to be sterilized to get rid of

¹ The evidence suggests that in approximate terms the average drug manufacturing company spends only about 40 per cent of what the average manufacturing firms spend on plant and equipment.

bacteria, the ampoules have to be tested in a dye bath for imperceptible cracks, etc. If the final package sells for 10 cents, which is said to be less than a profitable price for most companies, the price of the final package would be 2,500,000 times the cost of the raw material.¹

The cost to the Canadian company of acquiring a particular raw material may be a more or less arbitrary figure. As we have seen, most of the major Canadian drug companies are affiliated with companies in the United States or Europe, who supply the Canadian companies with their requirements of basic drugs. In most cases therefore the Canadian firm is not dealing at arm's length with its supplier, and as we have suggested earlier the price arranged between them may be arrived at with tax or tariff considerations in mind. This is particularly likely to be the case where the drug is in a semi-processed state, for which there is no outside market and hence no market price, or where the product when finished is a specialty item which is not sold by the parent company to anyone else at the same trade level as the Canadian subsidiary.

A few drugs may be imported into Canada duty-free but most are subject to duty. Single drugs of a class or kind made in Canada are generally dutiable at rates of 15 to 20 per cent of "fair market value". Single drugs of a class or kind not made in Canada are free of duty under the British Preferential Tariff but dutiable at 15 per cent under the Most Favoured Nation schedule. Combinations and mixtures of drugs are generally dutiable at rates ranging from 17.5 per cent to 25 per cent of "fair market value". The amount of duty paid by importers of drugs is approximately \$3 million per year.² It should be pointed out that the dumping provisions which may be invoked when goods are imported at less than "fair market value" in country of origin tend to encourage American parent companies, for example, to charge their Canadian subsidiaries a price not lower than the best price they offer in the United States. In many cases this best price would not involve a sale to another manufacturer but would rather reflect the supply of the product to a lower level of trade.

Cost of Quality Control

There are some cost components to which a great deal of importance is attached by the drug companies, which are hidden in the breakdown set out at the beginning of this section. One of these is the component commonly referred to as quality control. It is necessary to examine the significance of this component because uncertainty among physicians about the quality of

¹ Answers to Specific Questions received from the Royal Commission on Health Services, 1962, and provided by the Canadian Pharmaceutical Manufacturers Association, p. 2.

² Department of National Health and Welfare, Research and Statistics Division, *Report on the Provision, Distribution, and Cost of Drugs in Canada*, January 1963.

generic drugs appears to be one of the main factors limiting the competitive impact which they have in the Canadian market. The Director of Investigation and Research under the Combines Investigation Act calculated that the average expenditure on quality control for 27 Canadian drug firms amounted to 1.21 cents for every dollar of sales. On the basis of information received from 22 of the 27 companies, the Director concluded that expenditures on quality control represented 3.62 per cent of the cost of goods sold. The survey conducted on behalf of the Canadian Pharmaceutical Manufacturers Association included information on quality control expenses in 1960 for 35 drug companies. The figures obtained included amounts spent in Canada for quality control and amounts charged by parent or affiliated companies outside Canada for the operation of quality-control laboratories and to cover the costs of testing in outside laboratories, but did not include the cost of inspection staff and some other items. However, the expenditures as described for the 35 companies amounted to 4.2 per cent of total production cost.¹ There are obvious difficulties in the way of distinguishing a separate quality-control component from the general costs of manufacturing. In addition, where subsidiaries of foreign firms import prepared dosage forms of certain drugs, further expenditure in Canada for quality control will be negligible. We cannot accept the suggestion that the "large" expenditures made on quality control in Canada justify the assertion that only the major ethical drug companies are in a position to supply drugs of adequate quality.

Research and Development Costs

Another cost component which has been discussed a great deal in relation to the drug industry is the expense occasioned by research and development. We refer here once again to the Clarkson Survey conducted on behalf of the Canadian Pharmaceutical Manufacturers Association in which research expenditures covering 1960 were calculated for 35 companies. With total net sales of \$115 million these 35 companies spent a total on research and development of \$9,551,000 or 8.3 per cent of sales. As noted earlier, the companies actually spent only \$3,349,000 in Canada. The other \$6,202,000 was charged to the Canadian subsidiaries for research done elsewhere.² This is obviously a quite exceptional situation. In most industries foreign companies tend to supply their Canadian subsidiaries with know-how (including the results of research) and with capital, and to take the earnings of the Canadian subsidiaries as the return on their investment. In the drug

¹ Restrictive Trade Practices Commission, *Report Concerning the Manufacture, Distribution and Sale of Drugs*, Ottawa: Queen's Printer, 1963, p. 152.

² *Ibid.*, p. 75.

industry it is evident that foreign parent companies prefer to be separately compensated for supplying Canadian subsidiaries with know-how on the one hand and with capital on the other.

Sales Promotion

As indicated in Chapter 16, sales promotion in the drug industry is very expensive. In the cost breakdown given at the beginning of this chapter, selling costs appear to be divided principally between the "wages and salaries" component and the "other expenses" component. Turning once more to the Clarkson Survey that covered total sales of human pharmaceuticals by 40 companies in 1960 we find that medical promotion accounted for 8.6 per cent of the sales dollar, detailing accounted for 9 per cent of the sales dollar and direct selling accounted for 11.6 per cent of the sales dollar. Thus the total costs of sales promotion in the drug industry amount to 29.2 per cent of every dollar of sales.¹ In this breakdown medical promotion includes the cost of samples which alone accounts for 3.7 per cent of the sales dollar.² In connection with the cost of samples it is of interest to note that the dumping provisions of the customs tariff mean that goods which are imported to be distributed as free samples must be paid for by the Canadian company at their "fair market value" thus increasing the sales expense of the Canadian company.³

Profits

With respect to the profit component we sympathize with the comment made by Professor Brian Dixon of Queen's University in a study prepared for the Canadian Pharmaceutical Manufacturers Association that "the presence of a preponderance of joint costs, which are inseparable as far as individual products are concerned, makes any attempt at individual product cost pricing pointless and purely arbitrary. Any attempt to either justify or criticize individual prices on a cost basis under such circumstances is pointless, and invalid. The only course open for the firm, and the only test as to the over-all pricing policies, is to examine the pricing of the full line".⁴ Unfortunately, for reasons to which we have earlier alluded and which are treated more fully below, the earnings of the Canadian drug industry are not a satisfactory test of the over-all pricing policies of the industry because they are understated. This does not mean that they are relatively low. On the con-

¹ Answers to Specific Questions, *op. cit.*, p. 5.

² *Ibid.*, p. 9.

³ Green Book, *op. cit.*, p. 29.

⁴ Dixon, Brian, *An Economic Analysis of the Pharmaceutical Manufacturing Industry in Canada*, submitted to Stanley N. Conder, Canadian Pharmaceutical Manufacturers Association, Kingston, September 15, 1960, p. 30.

trary, in the period 1953 to 1960 inclusive, for the whole pharmaceutical industry (that is including the loss companies as well as the profit companies) the rate of return on investment was on the average 81 per cent higher than for all manufacturing. It was in fact 19.82 per cent in the drug industry as compared with 10.95 per cent in all manufacturing.¹

The Restrictive Trade Practices Commission referred to the effect of the dumping duty in bringing the cost to the importer up to the fair market value in country of origin and indicated it agreed with the statement made by the Director in the Green Book that:

“ ‘ . . . To the degree that the price charged by a foreign parent company to a Canadian subsidiary approaches the trade price in the country of origin, profit is taken by the parent rather than by the subsidiary. In an extreme case, such as that referred to in the letter quoted in Chapter III [p. 29] above, the Canadian subsidiary may sell at a loss, but it is obvious that the regular profit on the particular product had already been taken by the parent company. This means that profits of Canadian subsidiaries are not an accurate indication of the actual profit resulting from the sale of imported drugs; they reflect the earnings of the Canadian subsidiary only and do not reflect any profit previously taken by the parent company’ ”.²

Support for the view that profits tend to be taken by the parent company rather than by the Canadian subsidiary may be found in other figures published by the Commission. For nine Canadian branches or subsidiaries of firms carrying on an ethical drug business in the United States, the average rate of profit (before income tax) to sales was 15.68 per cent as compared with 24.98 per cent for the parent companies in the United States.³ Although there are some factors in Canada making for higher costs, such as lesser population density and the requirement of two languages in sales promotion, the economies of the two countries are so similar that such disparities in earnings are not found in most other industries, even where the Canadian companies are much more extensively engaged in manufacturing than they are in the drug industry.

We asked the Canadian Pharmaceutical Manufacturers Association if it agreed that the profits of Canadian subsidiaries are an inaccurate indication of the actual profit resulting from the sale of imported drugs because they reflect the earnings of the Canadian subsidiary only and do not reflect any profit previously taken by the parent company. The Canadian Pharmaceutical Manufacturers Association in its answers to our specific questions, replied that its members do not have access to their parent companies' accounting records, that they are, however, subject to Canadian customs

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 376.

² *Ibid.*, p. 178.

³ *Ibid.*, p. 362.

regulations and to scrutiny by Canadian income tax authorities, and that the parent-subsidiary relationships in the pharmaceutical manufacturing industry are no different from those which exist in other industries. The last part of this reply, however, overlooks a number of important points. In the drug industry there is frequently no independent market by which the price arranged between the Canadian subsidiary and the foreign parent can be tested either because the product in question is a semi-processed one or because it is an exclusive or specialty item which is not sold to other manufacturers. At this point we should also mention again the quite unparalleled payments for research or know-how made by the Canadian subsidiaries to the foreign parent companies. In his evidence before the Restrictive Trade Practices Commission, Mr. R. B. Thompson, Manager of the Medical Products Department of Cyanamid of Canada said:

“Mr. THOMPSON: Well, Mr. MacLeod, the price that we pay to our parent company, have been paying, is more than just a basic cost for the bulk crude material.

Mr. MacLEOD: Yes.

Mr. THOMPSON: It includes—it is one of the ways in which we contribute to the research programme in our parent company. The methods by which this kind of relationship takes form are changing in the industry and we are perhaps a good example of that because we will cease—we have already discontinued the importation of materials which you have described and we will now produce it in Canada. We also are now in the process and in fact have been negotiating an agreement on research and development, an agreement between Cyanamid of Canada and our parent organization, so that there will be a separate fee charged for research and development which in the past has been transmitted to the parent company through the medium of raw material purchased, not just tetracyclines, but of other things’”.¹

Allowing for the understatement of profits made in the drug industry referred to above, we conclude that profits of pharmaceutical companies in Canada appear to be running at at least twice the level of the manufacturing industry as a whole.² We have no objection to profit levels *per se*, believing as we do in the virtues of a basically free enterprise society. But we are concerned here with the objective of facilitating the effective working of market forces in the drug industry which could bring benefits to the Canadian consumer in the form of lower drug prices through increased competition and through the avoidance of wasteful and unnecessary expenditures.

¹ *Ibid.*, pp. 331-332.

² This may be an understatement because the profits reported by the pharmaceutical companies are 81 per cent higher than manufacturing as a whole, without allowing for the understatement of profits in the drug industry. A measure of this understatement may exist in the fact that the profits of the American companies referred to on page 680 were two-thirds higher than those of their Canadian subsidiaries.

Federal Sales Tax on Drugs

Finally a word should be said about the tax component in the breakdown presented at the beginning of this section. Except for five specific drugs, all drug preparations are subject to federal sales tax at the regular rate of 11 per cent. However, no sales tax is payable by hospitals if the drug is not resold for profit. As a result virtually all drugs sold to hospitals are now free of federal sales tax. Prescribed drugs are generally exempt from provincial taxes on retail sales.¹ The federal sales tax applies whether the drug is manufactured in Canada or whether it is imported. In the case of the drug manufactured in Canada the tax is calculated on the selling price. In the case of the drug imported, the tax is calculated on the duty paid value. Because the manufacturer's price is of course only about 50 per cent of the retail selling price, the sales tax represents nearer 5 per cent than 11 per cent of the retail price.²

A number of briefs submitted to us dealing with drugs made the point that the removal of the 11 per cent federal sales tax on drugs could be an important factor in reducing the costs and prices of pharmaceuticals and we were urged to make such a recommendation. We conclude that there is considerable merit in reviewing the question of whether drugs other than those sold to hospitals should remain subject to sales tax.³

Competition in the Drug Industry

As far as competition in the drug industry is concerned some companies offer quantity discounts, straight percentage discounts on orders above a certain size and special "deals" from time to time.⁴ In general, however, the Restrictive Trade Practices Commission concluded that price competition was not effective in the distribution of ethical drugs to the retail trade.⁵ Price competition is vigorous in certain sales to hospitals and government agencies. Apart from the fact that the federal sales tax does not generally apply on hospital sales, the Canadian Pharmaceutical Manufacturers Association explained that the primary difference between hospital and retail prices lay in the economics achieved by the drug companies in selling in bulk against selling in consumer-size packages through national distribution.⁶

This explanation is not quite adequate particularly in the light of the experience of hospitals in Saskatchewan. Evidence was given to us that prednisone, a cortisone preparation used in arthritic and asthmatic conditions,

¹ Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

² Restrictive Trade Practices Commission, *op. cit.*, p. 180.

³ See Chapter 2, Recommendation 65.

⁴ Green Book, *op. cit.*, p. 87.

⁵ *Ibid.*, p. 512.

⁶ Answers to Specific Questions, *op. cit.*

sold for \$17 per hundred units to the retail pharmacist in Saskatchewan at the same time that it was being sold at \$1.95 per hundred to hospitals and government departments. The Saskatchewan Pharmaceutical Association said that the usual explanation given by manufacturers for such differentials is that the price to the hospital involves no promotional material, it is a single transaction for a large quantity, and it does not usually involve the preparation of small packages.¹ In fact, the basic explanation for the differential appears to be that the majority of Saskatchewan hospitals with pharmacists, use the tender system where it may be applied, to bring competitive forces into play. The Director of Pharmaceutical Services of the University Hospital in Saskatoon explained that the use of tenders presupposes two things: first, an active pharmacy and therapeutics committee which will give the pharmacist authority to buy one brand of drug and dispense that brand as equivalent to all brands called for on a prescription, and second, that firms requested to submit tenders do in fact sell drugs of equivalent quality.

The following are examples of minimum and maximum prices quoted on tenders to the University Hospital in Saskatoon. On a quantity of 5,000 tablets of a particular drug the lowest bid received was \$4.29 per 500 and the highest quotation was \$19 per 500. On a quantity of 1,000 units of another drug the lowest quotation was \$22.52 per 1,000 and the highest quotation was \$46.54 per 1,000.²

The University Hospital in Saskatoon has 4,000 drug items in its inventory which are bought from 75 to 100 suppliers. Yet the hospital finds it practical to call for tenders for less than 25 specific drugs. Less than 25 per cent of all drugs by dollar volume are bought by the hospital on tender. An additional 17 per cent of the hospital's total drug requirements, principally intravenous fluids, are bought on contract. It was the opinion of the Director of Pharmaceutical Services that tendering could not be increased much beyond this because hospitals are faced with the need to buy a multiplicity of drugs which are used in small quantities. In many cases the hospital requires only 50 or 100 tablets of a particular drug and for this there may be only one supplier.

Experience elsewhere confirms that of the Saskatchewan hospitals. While admitting that a large volume of drugs was involved, the Government of Alberta expressed the opinion that the low prices received by its hospitals resulted from recognition by drug manufacturers of the hospital's greater bargaining power when they were in a position to disregard brand names.³ Also the Ontario Department of Health is reported to have begun to make

¹ Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4419.

² *Ibid.*, p. 4466.

³ *The Government of the Province of Alberta*, brief submitted to the Royal Commission on Health Services, Edmonton 1962, p. 101.

substantial savings in the purchase of tranquilizers and anti-tuberculosis drugs when it was able to bring in the competition of generic drug manufacturers by undertaking a testing programme.¹

It is possible to observe the impact of price competition in certain sales to hospitals in various parts of the country. The Restrictive Trade Practices Commission reported the following comparison of prices of certain drugs sold to retailers, hospitals, and the University Hospital in Edmonton in Alberta:²

Generic Name	Brand Name and Manufacturer	Price to Retail Pharmacist per 100	Price to Hospital per 100	Tender Price to University Hospital, Edmonton, per 100
		\$	\$	\$
Tetracycline (250 mg.)	Cosa-Tetracyn (Pfizer)	28.70	19.18	16.50 (20,000 lot)
	Tetrex (Bristol)	28.70	26.33	14.95 (20,000 lot)
	Muracine (Nadeau)	19.00	17.12	12.50 (\$2.00/16) (20,000 lot)
	Achromycin (Lederle)	25.88	23.27	21.81 (\$3.49/16) (20,000 lot)
Prednisone (5 mg.)	Meticorten (Schering)	13.62	7.00	1.62
Triamcinolone (4 mg.)	Aristocort (Lederle)	23.00	17.27	16.41
	Kenacort (Squibb)	23.04	18.65	18.65
Dexamethasone (.75 mg.)	Decadron (Merck)	17.88	14.50	11.50
	Deronil (Schering)	17.88	14.50	14.50
Methylprednisolone	Medrol (Upjohn)	23.01	—	10.73

¹ Report of the Select Committee of the Ontario Legislature on *The Cost of Drugs*, *op. cit.*, p. 65.

² Restrictive Trade Practices Commission, *op. cit.*, p. 314.

The University of Alberta Hospital received, in other tenders calling for 25,000 units of Prednisone, a low bid from Charles E. Frosst & Co. of \$1.20 per 100 units and a high bid from Parke, Davis & Co. of \$1.70 per 100; for 25,000 units of Phenylbutazone, a low bid from British Drug Houses (Canada) Limited of \$11.50 per 1,000 and a high bid from Intra Medical Products Limited of \$19.52 per 1,000; for 30,000 units of Hydrochlorthiazide, a low bid from Charles E. Frosst & Co. of \$7 per 1,000 and a high bid from Abbott Laboratories of \$22.50 per 1,000; for 20,000 units of Tetracycline a low bid from Nadeau Laboratories of \$12.50 per 100 and a high bid from Cyanamid of Canada of \$21.81 per 100; and for 10,000 units of Promazine HCL a low bid from Mowatt and Moore Limited of \$8.58 per 1,000 and a high bid from J. Wyeth & Brother (Canada) Limited of \$17.68 per 1,000.¹

With regard to Manitoba, we were given evidence by the Minister of Health of that province about recent calls for tenders by three mental hospitals which have established a group-buying programme. On one drug the low bid was \$140 and the high bid \$828; on another the low bid was \$220 and the high bid \$834; on a third drug the low bid was \$126 and the high bid \$405; and on a fourth drug the low bid was \$384 and the high bid \$1,128.²

Wholesaling

The Clarkson Survey covering the operations of pharmaceutical manufacturers in 1960 included an examination of trade discounts normally offered to different classes of customers. Such discounts are taken from list prices which in effect are suggested retail prices to the consumer. In the survey, 37 companies answered the questions about sales to wholesalers. The survey showed that it was the practice of three companies to allow to wholesalers a discount of less than 40 per cent; it was the practice of eight companies to allow a discount of exactly 40 per cent; it was the practice of 25 companies to allow a discount above 40 per cent and up to 50 per cent; and it was the practice of one company to allow a discount of over 50 per cent. This roughly confirms the Green Book finding that, although there was considerable variation, the most common practice was for drug manufacturers to allow wholesalers a discount of 40 per cent and $16\frac{2}{3}$ per cent. (This is a combined discount from the retail list price of 50 per cent.) In these circumstances the wholesaler would ordinarily pass on the 40 per cent discount to his retail

¹ *The Government of the Province of Alberta, op. cit.*, Appendix B, Section A.

² *The Government of Manitoba*, brief submitted to the Royal Commission on Health Services, Winnipeg, January 1962, p. 48.

or hospital customer.¹ Wholesalers normally sell to hospitals at the same price less the federal sales tax, as they do to retailers. (The wholesaler of course subsequently recovers the tax which he has already paid.)²

On the basis of this evidence then, the standard wholesale margin is 10 per cent of the retail selling price or 16 $\frac{2}{3}$ per cent of the wholesaler's selling price. Apparently the wholesale margin is narrowing. Drug Trading Company Limited, one of the large drug wholesalers in Ontario, which is a co-operative owned by retail druggists, grants rebates over and above regular discounts to its members. Other wholesalers in Ontario have had to offer concessions in order to remain competitive.³ According to the Canadian Pharmaceutical Association the formation of other buying co-operatives by pharmacists themselves has been responsible for tightening profit margins for wholesalers in many districts in Canada.⁴

It should be mentioned that certain drug manufacturers will sell only to wholesalers. Eli Lilly & Company (Canada) Limited is one such manufacturer. Retail druggists and hospitals which wish to buy products of the Eli Lilly Company must purchase them through wholesalers.⁵ At the other extreme are those drug manufacturers who do not give wholesalers any special recognition at all but allow the same discount to wholesalers as they do to retailers.⁶

Retailing

The normal trade discount allowed by manufacturers to both retailers and hospitals is 40 per cent off the suggested list or retail price. Some small suppliers allow the retailer a 50 per cent discount on ethical drugs rather than the more usual 40 per cent. Such firms frequently follow the policy of allowing the same 50 per cent to all customers, that is to wholesalers, hospitals, physicians, etc. In contrast most of the larger firms allow only 25 per cent off list to medical practitioners.⁷ Large quantities of drugs are distributed through wholesalers and on purchases from such sources druggists usually receive a smaller discount than they do from manufacturers.⁸ As indicated earlier, the Clarkson Survey of the operations of pharmaceutical manufacturers in 1960 included an examination of trade discounts. Of 37 companies surveyed, 31 reported upon their sales to druggists. Of the reporting com-

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 306.

² Green Book, *op. cit.*, p. 87.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 309.

⁴ *The Canadian Pharmaceutical Association, Inc.*, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 63.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 308.

⁶ Green Book, *op. cit.*, p. 86.

⁷ *Ibid.*, p. 88.

⁸ Restrictive Trade Practices Commission, *op. cit.*, p. 396.

panies, 24 allowed discounts of exactly 40 per cent and seven allowed discounts of over 40 per cent and up to 50 per cent. In addition, certain companies indicated that they allowed volume discounts and special discounts on certain products from time to time. With respect to proprietary drugs, household remedies, and sundry drug products, the pattern of discounts varied widely but discounts of less than 40 per cent seemed to be usual.¹

In its brief to the Restrictive Trade Practices Commission the Canadian Pharmaceutical Association included the results of a survey, which it conducted in all provinces except Newfoundland, of the prices at which eight specific drug and sundry items could be purchased from manufacturers and wholesalers. The result of this survey showed considerable variation in the terms on which druggists purchased their supplies of drugs. The maximum difference in cost prices, expressed as a percentage of the lowest price, was 83.3 per cent. There was as much as 50 per cent variation in prices paid for different purchases from manufacturers and up to 39.2 per cent variation in prices on purchases from wholesalers.² As we shall see, the variation in costs to druggists is not reflected in their selling prices.

We explored the possibility that retail druggists generally might obtain better prices through bulk purchasing from manufacturers, but the retailers who appeared before us did not see much likelihood of this development. The Saskatchewan Pharmaceutical Association pointed out that a co-operative wholesaler gets the same price from manufacturers as other wholesalers, has comparable costs, and therefore cannot be expected to have substantial savings to pass on to member retailers. Bulk purchasing by smaller groups of retail druggists would not involve much in the way of a bargaining weapon. In any event, a bulk depot would have to meet the cost of repackaging drugs and the cost of shipping them to member stores. In addition such things as narcotic drugs cannot just be passed from druggist to druggist with informality, nor can a bulk depot handle them unless licensed as a wholesaler.³

Generally speaking, as we said earlier, drugs are exempt from provincial sales tax. In Ontario, Quebec and British Columbia drugs are exempt from provincial sales tax only when they are sold on prescription. In Saskatchewan and New Brunswick the exemption of drugs from the application of the provincial sales tax is a general one. Manitoba and Alberta do not impose a provincial sales tax.⁴

The policy of using the manufacturers' list price in determining the price to be charged on a prescription is almost universally followed by druggists in Canada. The most common trade discount allowed by manufacturers

¹ *Ibid.*, p. 306.

² *Ibid.*, p. 392.

³ Transcript, *op. cit.*, January 24, 1962, Vol. 19, p. 4421.

⁴ Restrictive Trade Practices Commission, *op. cit.*, p. 181.

is 40 per cent and this means an initial mark-up over cost by retail druggists of $66\frac{2}{3}$ per cent. In addition a further charge is usually made for broken quantities, that is, where the prescription calls for a smaller quantity of the drug than is contained in the package supplied by the manufacturer. Beyond this a professional dispensing fee is usually added. The amount of this fee varies depending upon the particular formula used in its calculation. When dispensing expensive drugs, pharmacists sometimes forego the addition of the professional fee.¹ Provincial pharmaceutical associations in Canada publish pricing guides for the use of their members. These pricing guides usually contain two sets of retail prices—one to be used where the prepared dosage form is sold and one to be used where the pharmacist actually compounds the prescription. The pricing guides are especially convenient to the retail druggists where broken quantities of drugs are involved.

To illustrate: In the Province of Alberta when a drug is subject to the standard trade discount of 40 per cent, the established dispensing fee is 75¢ on unbroken quantities and \$1 on broken quantities. The dispensing fee is a flat charge which is applicable whether the drug costs the pharmacist 50¢ or \$10. The annual survey covering the year 1961 conducted by the Canadian Pharmaceutical Association disclosed that the average price of all prescriptions dispensed in Canada was \$3.14. If we apply the Alberta formula (and disregard for the moment broken quantities) it appears that manufacturers' suggested list prices must have averaged \$3.14 less 75¢ or \$2.39. If we assume that druggists bought at the standard trade discount of 40 per cent, the average cost to the druggist must have been \$1.43. The average price of \$3.14 therefore represents a mark-up over the standard cost to the druggist of slightly more than 119 per cent. To the extent that broken quantities were involved, the dispensing fee and the mark-up over cost would be correspondingly higher.² To the extent that druggists obtained trade discounts greater than 40 per cent, or to the extent that they were able to take advantage of special quantity discounts or other special prices from manufacturers, their costs would be lower than the standard cost used in this calculation and again the mark-up over cost would be correspondingly higher than 119 per cent.

Another pricing formula which has been used by retail druggists is to take the cost of ingredients and simply add a \$2 dispensing fee with no mark-up. This formula lowers the cost of high-priced drugs but increases the cost of low-priced drugs.³ While used by some pharmacists this formula has not received any important measure of acceptance, according to the Canadian

¹ *Ibid.*, p. 395.

² Transcript, *op. cit.*, February 13, 1962, Vol. 23, p. 5235.

³ *Ibid.*, p. 5237.

Pharmaceutical Association. Among the reasons given is the fact that the use of the manufacturer's suggested list price plus a professional fee up to 75¢ has been common practice for decades and the fact that druggists are reluctant to increase prices in the lower brackets.¹

There is evidence that about 80 to 85 per cent of all retail pharmacists in most provinces use the pricing guide which is endorsed by the local pharmaceutical association.² The Restrictive Trade Practices Commission concluded: "The general effect of the practices followed by retail pharmacists in pricing prescriptions is to produce uniform or closely similar prices for comparable prescriptions in the same area. Variations in prices are not excluded but they will not significantly affect the prevailing pattern of prices".³

The degree of uniformity may be explained on several grounds. Government regulations which require that certain drugs be sold to consumers only through drug stores under the supervision of properly qualified pharmacists, obviously constitute a formidable barrier to the entry of new kinds of competition.

The Director of Investigation and Research under the Combines Investigation Act found no clear evidence of agreement among druggists to adhere to the pricing guides but he found that they were widely followed. Price competition is generally regarded by pharmacists as demeaning to their status as professional persons. The Director questioned the propriety of druggists' associations performing the dual roles of regulating the profession of pharmacy and the operation of drug stores, from the point of view of protecting the health of the public and controlling the distribution of narcotics, etc., on the one hand, and acting as a trade association concerned with its members' economic welfare on the other.⁴

The Restrictive Trade Practices Commission concluded that variations in retail prices gave rise to concern among druggists' groups only when the possibility of lower prices was brought to the attention of the public through advertising. It was also the opinion of the Commission that part of the interest of provincial pharmaceutical associations in preparing and issuing price guides was due to their desire to lessen the amount of price variation.⁵ The Commission also pointed out that the rules of some provincial pharmaceutical associations require that a coded price be shown on any prescriptions given back to customers. The Commission thought that there could be only one main reason for this requirement, that is,

¹ *The Canadian Pharmaceutical Association, Inc., op. cit.*, p. 72.

² Restrictive Trade Practices Commission, *op. cit.*, p. 394.

³ *Ibid.*, p. 400.

⁴ Green Book, *op. cit.*, p. 256.

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 397.

that any other pharmacist would identify the symbol and charge the same price. The Commission concluded that the coding of prices should be abandoned.¹

One important consequence of the wide-spread application of the same percentage mark-up formula is that little incentive remains for retailers to seek or even handle lower-costing drugs because the higher the manufacturer's suggested list price, the higher the return to the druggist.

Since the existing pricing system encourages the use of higher-priced drugs in favour of lower-priced drugs, an attempt on the part of the Federal and Provincial Governments to stimulate increasing use of generic name drugs because of lower cost is likely to face many difficulties. We discussed the desirability of increasing the use of generic name drugs in Chapter 16. We discuss in this chapter the need for cost-price and industry studies relating to drugs which would bring to the attention of the Parliament of Canada, the governments and the public as a whole, the results that may be obtained from measures to encourage wider use of lower-priced generic name drugs. Should the studies show that whatever measures were taken prove to be ineffective, further consultation among governments, the drug industry and the medical profession may become necessary to achieve the desired objective of lowering of the prices of drugs where this objective may be achieved without affecting the quality and effectiveness of the drugs in question. We believe that with co-operation of the various groups involved, drug prices can be brought down in Canada and that public understanding of the facts and reasons for high drug prices, followed by appropriate public policies, will assist in achieving this objective.²

DRUGS IMPORTED AND MANUFACTURED IN CANADA

The United States has been the main source of Canada's imports of penicillin and streptomycin for many years. Great Britain has been the second most important source for both, until in the case of penicillin it was surpassed by Denmark in 1960.³ According to the Director of Investigation and Research under the Combines Investigation Act, Italy and Denmark appear to be the chief sources of supply for those firms which import drugs which they cannot obtain otherwise because of patent control in Canada.⁴ Neither drugs themselves nor the processes by which they are produced can

¹ *Ibid.*, p. 499.

² We stress further on in this chapter the need for an over-all programme of action and studies concerning drug costs and drug prices. (See also Chapter 2, Recommendation 81).

³ Restrictive Trade Practices Commission, *op. cit.*, p. 47.

⁴ Green Book, *op. cit.*, p. 42.

be patented in Italy and only chemical processes can be patented in Denmark. Apart from the countries already named, Czechoslovakia and West Germany were important sources of imports of other antibiotics in 1961.¹ It may be noted that in the case of a patented drug, an importer is likely to offer only a standard dosage form, while the Canadian patentee is likely to offer a wide variety of forms.²

In the course of the hearings conducted by the Restrictive Trade Practices Commission, Mr. Jules R. Gilbert appeared as a witness and was examined at some length about the effect of patents upon his company's business and about the drugs which he imported. His evidence was summarized by the Commission as follows:

"His company manufactures on its own premises about 70 per cent of the finished drug products sold by it. It does not make any basic drugs, importing at least 95 per cent of its requirements from outside Canada. He stated that, in respect of drugs for which patents are held, his company had difficulty in buying them in Canada. He cited the drug chloramphenicol, stating that the price charged by a Canadian company producing under a patent licence was \$208.00 a kilogram, that this company would not sell to him, but that he could buy the drug in Italy for about \$34.00 a kilogram. Another instance was meprobamate, whose price by the same Canadian company was, he said, about five times what he regarded as normal. Nor would this Canadian company sell meprobamate to him. "His company had no difficulty in purchasing drugs that were not subject to patents and for such drugs the prices charged by the same Canadian company were very close to the duty paid world price. Where patents existed, however, there was a tremendous spread between the prices charged by Canadian companies and those available abroad, particularly in Italy, but also in Denmark, Switzerland, and for chloramphenicol, Hungary".³

Chloramphenicol and the tetracycline group of drugs are by far the most widely sold of the broad spectrum antibiotics. The prices of almost all brands of these drugs were reduced substantially between December 1959 and June 1961 according to the Restrictive Trade Practices Commission and many of them were further reduced in 1962. The uses of these drugs overlap those of others whose prices were thereby apparently affected also. With respect to what caused the price reductions on chloramphenicol and the tetracyclines the Restrictive Trade Practices Commission noted that in 1959 there emerged three small suppliers of imported chloramphenicol all of whose prices were well below those of the large manufacturers. One of them was also supplying tetracycline. By June 1961, other small suppliers became active. The evidence indicated that the Gilbert company was importing these drugs under their generic names at prices much below those available

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 52.

² Green Book, *op. cit.*, p. 221.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 343.

in North America. The Commission concluded that while other factors may have been at work in Canada it was the competition from the lower-priced generic drugs imported from Europe which was the most important element in the price reductions made by the large brand name manufacturers at this time.¹

This conclusion is supported, at least indirectly, by the following price comparisons which are based upon information filed with us by the Government of the Province of Alberta on February 12, 1962, and also upon the answers to specific questions which we asked the Canadian Pharmaceutical Manufacturers Association and which were filed on April 30, 1962. In each case, brand names are compared with their generic equivalents:

Gilbert's price to the retail pharmacist of Tetracycline was \$14.40 per 100
Lederle's price to the retail pharmacist of Achromycin was \$25.88 per 100
Gilbert's price to the retail pharmacist of Chloramphenicol was \$10.00
per 100

Parke-Davis' price to the retail pharmacist of Chloromycetin was \$23.60
per 100

Intra's price to the retail pharmacist of Enicol was \$23.82 per 100

Gilbert's price to the retail pharmacist of Prednisone was \$4.00 per 100

Schering's price to the retail pharmacist of Meticorten was \$13.62 per 100

Gilbert's price to the physician of Prednisolone was \$5.00 per 100

Schering's price to the retail pharmacist of Meticortelone was \$13.62
per 100

Gilbert's price to the retail pharmacist of Chloropromazine was \$2.00
per 100

Poulenc's price to the retail pharmacist of Largactil was \$5.34 per 100

Gilbert's price to the retail pharmacist of Meprobamate was \$1.08 per 100

Wyeth's price to the retail pharmacist of Equanil was \$24.94 to \$26.25
per 500

Ayerst's price to the retail pharmacist of Miltown was \$26.25 per 500.²

After examining the evidence, we have concluded that imports of drugs have had the effect of reducing drug prices in Canada in certain important areas. In our view the benefits accruing to society as a whole from lower drug prices outweigh the possibilities of increasing manufacturing opportunities of such drugs in Canada where the smallness of the Canadian market makes production of such drugs in this country an uneconomic enterprise.

Hence we conclude that consideration should be given to the possible reduction or abolition of tariffs on imported drugs, change in the administration of "anti-dumping" regulations in respect to drugs, and to compulsory licensing under the Patent Act to include the licensing of imports of drugs with safeguards to assure the quality of drugs brought into Canada. These subjects are discussed more fully later on in this chapter.

¹ *Ibid.*, p. 358.

² Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

PRICE TRENDS

The price index for prescriptions, compiled by the Dominion Bureau of Statistics has not risen as rapidly as the cost of living index. The index for prescription drugs was 106.1 in 1951, it rose to 111.6 in 1959, to 112.9 in 1960, and dropped back to 100.6 in 1961.¹ However, the annual surveys conducted by the Canadian Pharmaceutical Association and reported in the *Canadian Pharmaceutical Journal* show that the average price per prescription in Canada increased 86.9 per cent between 1951 and 1961.² In addition expenditures on prescribed drugs in retail drug stores as a percentage of Gross National Product rose annually in the period 1953 to 1959 inclusive from 0.2 per cent to 0.3 per cent, and remained unchanged at 0.3 per cent in 1960 and 1961.³ These apparently conflicting trends can only be reconciled if there has been greater use of higher-priced drugs or if there have been larger quantities dispensed per prescription.

The limited purpose to which the Dominion Bureau of Statistics Price Index of Drugs is devoted should be borne in mind: it is used as a component of the Consumer Price Index which measures changes in prices of a specific basket of goods. This basket is periodically reviewed. In the case of drugs, the last revision occurred in 1957.

The price index on drugs covers only five drugs on a weighted basis.⁴ As a result the price index reflects price changes of only a minute fraction of the several thousand items in use in Canada as prescribed drugs.

We conclude that any examination of drug prices requires more intensive inquiry than reliance on the general purpose price index on drugs currently in use by the Dominion Bureau of Statistics. In effect it would be our hope that, if cost-price and industry studies relating to drugs are undertaken, more comprehensive price indices with appropriate subdivisions will be developed covering prescribed pharmaceuticals in Canada.

In the analysis of the industry which he prepared for the Canadian Pharmaceutical Manufacturers Association, Professor Brian Dixon referred to one drug company which had discovered that the products which made up 60 per cent of the items in its regular line and contributed 45 per cent of its sales volume at one time, ceased to exist on the market at the end of a ten-year period.⁵ Similarly the Director of Investigation and Research under the Combines Investigation Act pointed out that one large company,

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 390.

² *Ibid.*, p. 388.

³ Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

⁴ The drugs covered are: (a) Tetracycline capsules, (b) two types of Penicillin tablets, (c) Phenobarbital tablets, (d) Secobarbital Sodium capsules and (e) Meprobamate N.N.D. (non-narcotic drug) (2-methyl-2-n-propyl-1, 3-propanediol dicarbamate).

⁵ Restrictive Trade Practices Commission, *op. cit.*, p. 368.

Smith Kline & French, reported that 60 per cent of its sales are of products less than three years old and 80 per cent of its sales are of products less than six years old. In the case of this company the Director naturally concluded that a comparison of present prices with prices ten years earlier would be meaningless because the same products were not involved.¹ Further the Canadian Pharmaceutical Association indicated that one large United States pharmaceutical company, American Home Products (whose subsidiaries Wyeth and Ayerst operate in Canada) stated before the Kefauver Committee in 1960 that 65 per cent of its current ethical drug business was in products that did not exist five years previously. The Canadian Pharmaceutical Association also referred us to an estimate that for the pharmaceutical field as a whole, 50 per cent of the products now being used were not on the market five years ago and 75 per cent were not on the market ten years ago.²

The price histories of a number of important drugs have been substantially different according to whether the drugs were subject to patent control or whether they were not. The Director of Investigation and Research under the Combines Investigation Act found that the prices of the older penicillins had declined very greatly since their introduction. As an example he referred to a kind of penicillin introduced by Eli Lilly and Company (Canada) Limited in 1948 with a list price of \$23.40 which by September 1959 had a list price of only \$1.50. Streptomycin and dihydrostreptomycin were the next antibiotics to be discovered after penicillin and they likewise were highly priced at first but have also experienced a very large decline in price.³

The Restrictive Trade Practices Commission concluded:

"... In respect of the older penicillins, for which no patents were obtained, and the streptomycins, for which licences were freely given, prices soon began to decline and over a period of some years reached a level that appears to have been very close to costs. However, in respect of later drugs controlled closely by patents, notably the five broad spectrum antibiotics, the story is quite different. Chlortetracycline (Aureomycin), chloramphenicol (Chloromycetin) and oxytetracycline (Terramycin) came on the market in Canada successively within a year or two, beginning in May 1950. Price reductions occurred down to 1953, due largely to improvements in methods of production. From 1953 till late in 1960 no reductions occurred. When Cyanamid introduced tetracycline (Achromycin) in 1953 and demethylchlortetracycline (Declomycin) in 1959 it adopted the prevailing price of the three earlier broad spectrums. When price reductions did occur late in 1960 there may have been several contributing factors, but the Commission is of the opinion that the lower prices of imported European drugs constituted the most important one. During the intervening years, notwithstanding that all of these drugs enjoyed large

¹ Green Book, *op. cit.*, p. 237.

² The Canadian Pharmaceutical Association, Inc., *op. cit.*, p. 27.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 323.

sales and that the costs of both basic drugs and finished dosage forms showed remarkable variations between companies, no company thought it desirable to reduce its prices. It was as if the price established in 1953 had come to be regarded as the right price".¹

Further reductions occurred in the prices of the drugs referred to by the Commission in 1962.² Other antibiotics declined in price in the same period. Between December 1959 and June 1961 the following drugs experienced the substantial reductions in list prices indicated: erythromycin 15.7 per cent, griseofulvin 29.2 per cent, neomycin tablets 41.1 per cent, novobiocin 15.1 per cent, triacetyloleandomycin 15.5 per cent, spiramycine 30.5 per cent. There were, however, no reductions in the list prices of cycloserine, kanamycin, neomycin sulphate powder, nystatin, ristocetin, vancomycin and viomycin sulphate. The latter items are all specialty products which have to face little or no competition.³

Between December 1959 and June 1961 reductions were made in the list prices of almost all brands of meprobamate. Similar reductions occurred with respect to prednisolone and prednisone, but not with respect to other important corticosteroids in the supply of which there were few firms handling generic products.⁴

In the study which he did for the Canadian Pharmaceutical Manufacturers Association, Professor Brian Dixon made the following observation about price trends for individual drugs. Initially, the price set for a new drug is demand oriented in the sense that it is not based on cost so much as on estimates of demand and the availability of substitutes. Introduction of competing products or improvement in production of the drug in question tends to reduce its price to a second level where it often stays. Eventually it may be largely displaced by another drug significantly better in therapeutic performance. At this point sharp price reductions on the first drug would have little effect, because, according to Professor Dixon, the customer is not interested in an inferior product at any price, except perhaps on the fringe of the market. Thus there is no point in the manufacturer's reducing the price further and price rigidity becomes manifest.

Professor Dixon suggested the only competitive solution for the manufacturer of the first drug was to introduce some innovations himself. This analysis appears to be incomplete in important respects. The evidence suggests that drugs are sometimes displaced by means of successful sales promotion campaigns, whether or not the new drugs give significantly better performance. Moreover it is not the consumer who makes the choice between the new and the old drug. It is a logical inference that if faced with the

¹ *Ibid.*, p. 511.

² *Ibid.*, p. 332.

³ *Ibid.*, p. 357.

⁴ *Ibid.*, p. 336.

opportunity of using a new drug with a slightly greater therapeutic value at the cost of a big increase in price, the consumer might have a very different interest from the physician. Finally, the evidence made available to us suggests that a number of important drugs have not in fact followed the pattern suggested by Professor Dixon but were reduced substantially in price only as a result of the competition of imports.

We were told by the Ontario Branch of the Canadian Society of Hospital Pharmacists that in the year 1961 there was a modest pause in the rising trend in drug costs primarily due to the reduction in price of many of the major antibiotics. This trend appears to have been temporary as newer drugs are now appearing on the market to replace some of those that were reduced in price.¹ This opinion was shared by the Director of Pharmaceutical Services for the Saskatchewan Department of Health who said that while there was a tendency for the cost of individual preparations to remain fairly stable or even fall in price, many drugs in recent years have had only a short period of popularity before being superseded by newer drugs which have had a tendency to come on the market at higher prices than their predecessors.² These opinions appear to be supported by data given to us by the Province of Alberta covering the years 1958 to 1961. In the Aberhart Memorial Sanatorium, where the use of antibiotics predominates, the cost of drugs per patient-day has risen from $16\frac{8}{10}$ cents to more than 27 cents in a three-year period. At the Ponoka Mental Institute, where ataractic drugs are used in greatest proportion, the cost has risen from one cent to more than two cents per patient-day over the same period.³

INTERNATIONAL COMPARISON OF DRUG PRICES

The Director of Investigation and Research under the Combines Investigation Act presented in the Green Book⁴ some international comparisons of 1959 prices for a number of important drugs. Some of these comparisons are reproduced here in simplified form, e.g., where more than one price was available from a single country, the highest price is used so as to understate, if anything, the apparent disadvantage to the Canadian consumer:

¹ Ontario Branch of the Canadian Society of Hospital Pharmacists, brief submitted to the Royal Commission on Health Services, Toronto, June 1962, p. 18.

² Totten, W. J., Director of Pharmaceutical Services, Medical Services Division, Saskatchewan Department of Public Health, address delivered to the Canadian Pharmaceutical Association Convention in August 1960; see Appendix A, *The Saskatchewan Pharmaceutical Association*, brief submitted to the Royal Commission on Health Services, Regina, January 1962.

³ *The Government of the Province of Alberta*, op. cit., p. 110.

⁴ Green Book, op. cit., p. 203.

Product	Country	Marketing Company	Price to Druggist
			\$
Prednisone	Japan	Merck	27.78
	Australia	"	24.00
	Panama	"	22.99
	Italy	"	22.16
	Canada	"	20.80
	United States	"	17.90
	Austria	"	17.16
	Holland	"	16.05
	Brazil	"	14.15
	Great Britain	"	7.53
Chlorpromazine	Canada	Rhone-Poulenc	3.75
	United States	Smith Kline & French	3.03
	Japan	Banyu Pharmaceutical Co.	2.14
	Brazil	Rhodia	1.53
	Belgium	Specia	1.37
	Holland	Specia	1.31
	Italy	Farmitalia	1.22
	Germany	Bayer .....	.97
	Australia	May & Baker .....	.94
	Great Britain	May & Baker .....	.77
	France	Specia .....	.51
Prochlorperazine	United States	Smith Kline & French	3.93
	Canada	Rhone-Poulenc	3.60
	Australia	May & Baker	2.84
	Great Britain	May & Baker	2.24
	Belgium	Specia	1.61
	France	Specia .....	.80
	Germany	Bayer .....	.80
Mepro- bamate	Venezuela	Wyeth	5.44
	India	Lederle	4.79
	Iran	Cyanamid	4.68
	Canada	Wyeth	3.60
	Holland	Cyanamid	3.56
	Australia	Wyeth	3.47
	United States	Wyeth	3.25
	Belgium	Cyanamid	3.25

Product	Country	Marketing Company	Price to Druggist
			\$
	France	Byla	2.65
	Japan	Banyu	2.56
	Brazil	Wyeth	2.20
	Mexico	Cyanamid	2.00
	Italy	Wyeth	1.94
	Austria	Cyanamid	1.56
	Great Britain	Cyanamid	1.48
	Germany	Asche (Wyeth)	1.36
	Argentina	Cyanamid .....	.75
Sparine	Canada	Wyeth	3.15
	United States	Wyeth	3.00
	Venezuela	"	2.70
	Mexico	"	1.66
	Holland	"	1.59
	Italy	"	1.32
	Brazil	"	1.26
	Australia	" .....	.94
	Germany	Bayer .....	.83
Serpasil	United States		12.00
	Canada		9.87
	Venezuela		7.85
	Japan		5.56
	Brazil		5.53
	India		5.29
	Italy		4.90
	Iran		4.87
	Australia		4.41
	Belgium		4.24
	Great Britain		3.94
	Germany		3.42
	Austria		2.78
	France		1.21

Cyanamid of Canada gave evidence to the Restrictive Trade Practices Commission about comparative prices in a number of countries in late 1961 for its product Achromycin. Tabulated below are suggested prices to the consumer for packages of 16 and 100 capsules:

Product	Country	Marketing Company	Consumer List Prices	
			(16's) \$	(100's) \$
Achromycin	Greece	Cyanamid	7.16	38.61
	United States	"	7.11	43.13
	Canada	"	7.11	43.13
	Costa Rica	"	6.01	34.80
	Japan	local production	6.00	26.39
	Colombia	Cyanamid	5.84	34.62
	Italy	local production	5.81	—
	Mexico	Cyanamid	5.59	33.73

The Commission was informed that achromycin is produced in both Japan and Italy, but in the other countries mentioned, it is imported from the United States.¹

Cyanamid of Canada also presented the Restrictive Trade Practices Commission with a comparison of its actual sales by product groups at Canadian prices with what such sales would have amounted to, calculated according to American prices. For all products distributed by the Canadian company, the difference between the price level in the United States and the higher Canadian price level was about equal to the amount of the federal sales tax.²

The Green Book contains a comparison of the list prices of certain drugs in the latter part of 1959, in Canada and the United States.³ Included in the comparison are penicillins, dihydrostreptomycin, broad spectrum and other antibiotics and tranquillizers. In the comparison, there are 75 items if each package size of drug listed for both countries is treated as a separate item. In the large majority of instances, the price is higher in Canada than in the United States.⁴ The Canadian Pharmaceutical Manufacturers Association reworked the comparison to remove the federal sales tax from the Canadian prices. On this basis, out of a total of 69 items, prices of 11 items were the same or within three cents of each other in the two countries, prices of 30 items were lower in Canada than in the United States, and prices of 28 items were higher in Canada than in the United States.⁵

Additional light is thrown on the general relationship between prices in Canada and the United States by another comparison made by the

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 406.

² *Ibid.*, p. 415.

³ Green Book, *op. cit.*, p. 210.

⁴ Restrictive Trade Practices Commission, *op. cit.*, p. 411.

⁵ *Ibid.*, p. 415.

Canadian Pharmaceutical Manufacturers Association. Comparing list prices of 14 companies selling both in Canada and the United States and covering a total of 1,213 products, the Association found that 739 were higher priced in Canada and 212 were higher priced in the United States (the remainder were presumably the same).¹ The Canadian list prices included the federal sales tax. To remove it would of course drop some products from the higher-in-Canada classification. Where Canadian prices were higher, however, the differences appeared in most cases substantially to exceed what could be attributed to the tax (i.e., five to six per cent of the retail price).

We have earlier referred to the effect of the application of an unchanging percentage mark-up by the retail druggist, in expanding any initial difference in the price from the manufacturer to what may be (if the drug is an expensive one) a substantial difference in dollars and cents at the retail level. In addition, there is another factor. Resale price maintenance is illegal in Canada and the Director of Investigation and Research under the Combines Investigation Act found no evidence that manufacturers of drugs attempted to force druggists to maintain prices. In the United States on the other hand, in those states in which so-called "Fair Trade" laws are in force, drugs are subject to them and druggists can be compelled to maintain the "Fair Trade" prices. It is ironic that in spite of these legal differences, Canadian druggists appear to be reluctant to cut the manufacturers' suggested resale prices, whereas in the United States, the so-called "Fair Trade" price is normally set at about 90 per cent of the suggested resale price, and there is evidence that this lower price level tends to prevail in some areas.²

We have made the point earlier that in many European countries the organization of the distribution of drugs differs greatly from that in Canada and the United States. We mentioned the rigid control in Denmark of the number and location of retail pharmacies, and that their activity is confined to handling pharmaceuticals. The Restrictive Trade Practices Commission was informed that in addition, prescription pricing in Denmark is controlled by the government. It was told that in 1958 the average cost of prescriptions filled in Denmark was less than \$1 as compared with the average cost in Canada at retail of \$2.78.³

The Canadian Pharmaceutical Association drew our attention to the fact that average prescription prices at retail tend to be higher in the United States than in Canada. The respective averages were estimated to be \$1.90 and \$1.68 in 1951, and \$3.19 and \$3.06 in 1960.⁴ In the light of the other evidence which we have referred to, this suggests that a larger proportion of

¹ *Ibid.*, p. 414.

² Green Book, *op. cit.*, p. 89.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 409.

⁴ *The Canadian Pharmaceutical Association, Inc.*, *op. cit.*, p. 132.

the more costly drugs are prescribed in the United States than in Canada. This difference may rest upon the earlier introduction or more effective promotion of the higher costing drugs in the United States, or it may perhaps reflect greater concern on the part of Canadian physicians for their patients' purses.

We turn now to an examination of the institutional factors as they affect cost and price levels of drugs prescribed and sold in Canada and we deal in particular with the Patent Act, the Trade Marks Act, Tariffs and other legislation.

PATENT ACT

In Canada, since the overwhelming proportion of patents issued is held by foreign residents, we might assume that the cost to the country of obtaining the benefits of the patent system can be measured by whatever royalty payments are made. This is not the case. The Restrictive Trade Practices Commission makes the comment "that drug manufacturers have secured far more from the price margins on drugs under patent control than would have been secured from any royalties which might have been awarded under compulsory licences".¹ The essence of the patent system is that the owner of the patent may charge monopoly prices for his product and call upon the power of the state through the courts to protect his monopoly position. Experience elsewhere with the patent system, however, indicates that other monopoly elements may develop which are not so obvious. Among such elements which have been identified are the tendency for patents to accumulate in few hands (in such circumstances the monopoly power of a patent portfolio is generally considered to be greater than the sum of the little bits of monopoly coming from individual patents), the fact that patent litigation can be used as a powerful coercive weapon, and the fact that competition may be eliminated through cross-licensing of patents with other important producers.

Against this kind of background many countries have given drugs special treatment in the development of their patent systems. For example in Italy neither medicines nor processes for their production are patentable. In a few countries including the United States and Great Britain, both the drugs themselves and the processes for their manufacture may be patented.² In Canada processes are patentable. Under Section 41 (1) of the Patent Act

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 523.

² *Ibid.*, p. 99.

however, whenever the process of manufacture is a chemical one, a patent can be obtained only for the process, or for the drug when produced by that process alone. Moreover, a recent judgment of the Supreme Court of Canada makes clear that a substance, intended for food or medicine, which is produced by a chemical process cannot be claimed as an invention by itself. It must be accompanied by a valid claim for the process.¹ The production of the same drug by another process, therefore, would not involve infringement. However, when a drug is produced by a process other than a chemical one, then both the process and the product may be patented individually and the claim for the product will be valid regardless of the process by which it is produced.

There is one consideration which makes the position of the holder of a Canadian patent less vulnerable than it might appear in comparison with that of the holder of an American patent. Under Canadian patent law, automatic protection is assured by a process patent which prevents the importation of products made abroad by processes patented in Canada. The theory is that the value of the process patent could be adversely affected if products manufactured by the process abroad could be freely imported. In the ordinary case this automatic protection from imports applies whether the product is new or not. However, we are informed that in order for the automatic protection to apply to drug patents the product itself must be new also.² In the United States there is no automatic protection of the patented process when the product is not also patented. As a result, drugs of Italian manufacture made by processes patented in the United States are coming into that country in increasing quantities at low prices.³

Another reason why the importation of drugs into Canada may be more difficult than appears at first glance is that because of the manner of establishing whether or not two drugs have been made by the same process. Section 41 (2) of the Patent Act puts the onus of proof on the shoulders of the defendant in an infringement suit.⁴

In the Patent Act there exist provisions for the compulsory licensing of patents on grounds which are applicable to all fields and not just to drugs. Compulsory licences may be issued whenever patents have been used to restrain or injure trade unduly or whenever the exclusive rights provided by the patents have been abused. In addition to such general provisions Section 41 (3) of the Patent Act provides specifically for the compulsory

¹ C. H. Boehringer Sohn versus Bell-Craig Limited, 1963 (unreported).

² Transcript, *op. cit.*, June 2, 1962, Vol. 66, p. 12581.

³ *Committee for the Furtherance of Creative Research in the Pharmaceutical and Allied Industries*, brief submitted to the Royal Commission on Health Services, Toronto, June 1962, p. 30.

⁴ Restrictive Trade Practices Commission, *op. cit.*, p. 101.

licensing of patents relating to food and drugs. The significance of this special provision is reviewed in the following passages of the Report of the Restrictive Trade Practices Commission:

"There can be no doubt that Parliament enacted subsections (1) and (3) of section 41 of the Patent Act in the interest of public health. Under section 41 (1), a pharmaceutical product may be patented if produced by a process other than a chemical one, but whenever the process of manufacture is chemical, a patent can be obtained only for the process or for the drug when produced by that process. Thus a drug produced by a chemical process receives less protection than those produced by other processes. When a drug made by any process, chemical or other, is subject to patent protection, a compulsory licence to manufacture such drug can be obtained under section 41(3) at any time on application to the Commissioner of Patents unless the Commissioner sees good reason not to grant the licence. The subsection further provides that in fixing the royalty payable under the licence the Commissioner shall have regard to the desirability of making the medicine available to the public at the lowest possible price consistent with giving to the inventor due reward for the research leading to the invention.

"One would expect to find competitors eagerly seeking licences in a period when many new drugs have been coming on the market, some of which have marked great advances in the treatment of certain types of diseases, and many of which have found wide acceptance and enjoyed very substantial sales. The prospect of profit should lead to such activity. What has been the actual situation? From 1923, when the special compulsory licence provision was enacted, to 1949 only one application was made for a compulsory licence. From 1949 to January, 1963, 22 applications were made. Of these, 2 were withdrawn and 2 have not been proceeded with. Indeed the foregoing record indicates that the compulsory licensing provisions have been put to very insignificant use.

"In his evidence before the Commission (Hearing, p. 296), Mr. J. W. T. Michel, the Commissioner of Patents, stated that only one application had ever been refused. It was an application for a licence to import, not to manufacture. As a rule, therefore, there appears to be no serious difficulty in the path of an applicant. Up to 1959, however, there may have been some uncertainty about the right interpretation to be given to section 41(3). In that year the Supreme Court of Canada ruled that section 41(3) applied to the product when produced by a chemical process as well as to the process itself. The uncertainty that may have prevailed up to the time of this decision may have contributed to the view that an application for a compulsory licence would be a lengthy matter at best and might lead to expensive, long drawn out litigation of which the outcome would be doubtful. For this reason, the Commission tried to ascertain whether the decision referred to above resulted in some increase in applications for compulsory licences. There were 8 applications from 1949 to July, 1960 and 6 in the next twelve months, but of these 6, 2 have since been withdrawn and 2 have not been proceeded with. Since July 1961, 8 more applications have been made, but none has yet been disposed of. It appears, therefore, that some increase has occurred in the number of applications, but in view of their subsequent history the increase cannot be regarded as significant.

"It may be argued that the compulsory licensing provisions induce the patent holders to grant licences on a voluntary basis. The Commission

has no means of ascertaining the number of voluntary licences, but the survey conducted by the C.Ph.M.A. indicates that the number is quite small in comparison with the number of manufacturing companies and the number of successful new drugs. With respect to this matter, Mr. J. W. T. Michel stated that there is still a marked tendency on the part of foreign companies holding Canadian patents to object strenuously to the granting of licences (Hearing, p. 302). Apart from cross licensing arrangements arising out of conflicting patent claims of 2 or more companies, there appear to have been no voluntary licences granted in respect of the five most important broad spectrum antibiotics. The position is almost the same for the newer penicillins, the tranquillizing or ataractic drugs and the corticosteroids. It is significant that it is precisely these four categories of drugs that have had the greatest impact upon the market during the last twelve or fourteen years. A number of them have had very large sales and have earned great profits for the patent holders. For these reasons, the Commission does not consider that the small number of applications for compulsory licences can be explained by the willingness of the patent holders to grant licences on a voluntary basis.¹

The evidence indicates that meagre use has been made of the compulsory licensing provisions of Section 41 (3) of the Patent Act. The Restrictive Trade Practices Commission suggested a number of factors which singly or in combination may act as deterrents either to voluntary or compulsory licensing. Possibly the rapid obsolescence of drugs means that most firms do not think it worthwhile to set in train the action necessary to obtain licences. Possibly the delays and inconvenience involved in obtaining a licence deter prospective producers from seeking them. In this connection the Commissioner of Patents gave evidence that even without any significant opposition, the length of time required from the making of an application for a compulsory licence to the issuance of it cannot be shortened to less than seven or eight months. If the patent holder wished to resist the claim for a compulsory licence he might of course appeal all the way to the Supreme Court of Canada². Perhaps the size of the capital expenditures required for producing a drug in relation to the size of the market discourages a second or third manufacturer from undertaking to make the same product. Potential rivals may be deterred by the expensive promotion which would be necessary to win business against an established product. Important know-how may exist which would not be disclosed by the patent. In some cases the probable royalty payment might be regarded as excessive. The policy of large drug firms may be to respect one another's patents and not to seek compulsory licences, although no evidence of this was presented to the Restrictive Trade

¹ Parke, Davis & Company, Ltd. versus Fine Chemicals of Canada Limited, 30 Canadian Patent Reporter, 59, as quoted in Report of the Restrictive Trade Practices Commission, *op. cit.*, p. 508.

² *Ibid.*, p. 108.

Practices Commission. The most probable explanation in the view both of the Director of Investigation and Research and the Restrictive Trade Practices Commission is that most of the large drug firms in Canada are subsidiaries of international companies with world-wide operations which are interested in promoting their own specialties. They are not interested in producing and promoting a product competitive with someone else's specialty for the Canadian market alone. Support for this explanation exists in the fact that the few compulsory licences which have been issued have gone chiefly to wholly-owned Canadian firms.¹

The Royal Commission on Patents, Copyright and Industrial Designs in its Report on Patents of Invention dated December 31st, 1959 discussed the subject of compulsory licensing. Without giving it strong endorsement the Ilsley Commission recommended that the general patent system in Canada be retained, but only with important modifications. Among the modifications recommended was the wider use of compulsory licensing. It indicated that it was concerned about the possibility of delaying tactics being employed against this wider use. To prevent such delays, the Ilsley Commission recommended that rules be made for proceedings before the Commissioner of Patents that would provide for complete disposition of every application for a compulsory licence within three months after proof of service of notice of the application upon the patentee. If serious delays developed, notwithstanding the new rules, the Ilsley Commission believed that amendments to the Patent Act should be considered to make licences issuable as of right. The Restrictive Trade Practices Commission endorsed these recommendations to the extent that the patent system continues to be applied to drugs.²

However, the Restrictive Trade Practices Commission was impressed, as the Ilsley Commission had been, with the views expressed by Penrose that:

"Any country must lose if it grants monopoly privileges in the domestic market which neither improve nor cheapen the goods available, develop its own productive capacity nor obtain for its producers at least equivalent privileges in other markets. No amount of talk about the 'economic unity of the world' can hide the fact that some countries with little export trade in industrial goods and few, if any, inventions for sale have nothing to gain from granting patents on inventions worked and patented abroad except the avoidance of unpleasant foreign retaliation in other directions. In this category are agricultural countries and countries striving to industrialize but exporting primarily raw materials.'" ³

¹ *Ibid.*, p. 510.

² *Ibid.*, p. 515.

³ Penrose, Mrs. Edith T., *The Economics of the International Patent System*, 1951, pp. 116-117, as quoted in *Ibid.*, p. 517.

Applying the tests suggested by Penrose, the Restrictive Trade Practices Commission concluded:

"The evidence collected in this inquiry does not show that patents have either cheapened the drugs available in Canada or improved them in any way. Productive capacity in Canada has definitely increased, but bearing in mind the great increases that have occurred in Italy, where there are no drug patents, it appears likely that Canadian productive capacity might have grown without patent protection, perhaps even at a faster rate than has occurred. Canadian producers have, in International Convention countries, whatever privileges those countries give their own nationals, which may or may not be the same as those granted in Canada by patents to nationals of those countries. Finally the Commissioner of Patents stated in evidence that with respect to Canadian patents generally the percentage held by Canadian residents was less than six per cent and in respect of drugs it was definitely less than that (Hearing, p. 310). It is therefore clear that Canada has very few drug inventions for sale. This has been the situation for many years and the Commission sees nothing in the evidence which suggests there is likely to be any significant change. The Commission has no complete information as to the volume of Canadian exports of patent protected drugs, but from the figures for 1958 contained in Table XLIII of the Green Book it would not appear to be large. For these reasons Canadian drug patents appear to have conferred substantial economic advantages on patentees, nearly all of them foreign. Only a handful of Canadians have received similar benefits therefrom".¹

The Restrictive Trade Practices Commission, not having found any advantages to Canada from the patent control of drugs which would offset in any significant degree the disadvantages to the Canadian public, nor being able to see any change in the foreseeable future, concluded that the only effective remedy was the abolition of patents on drugs. Even if compulsory licences were issuable as of right the Restrictive Trade Practices Commission believed that only the small Canadian drug companies would take advantage of such provisions. The results would only be palliative, not remedial.² The Commission did not apparently address itself to the question of how effective a remedy might be provided by compulsory licences to import.

We asked the Canadian Pharmaceutical Manufacturers Association the specific question: "Is there any reason why the Patent Act (Canada) should not be amended so that an importer might be able to obtain a licence to import for sale in Canada any patented drug by paying a royalty fee to be fixed by the Commissioner of Patents or by statute provided that the quality of the imported drugs meet Canadian standards?" The Association did not in its answer raise any special issues affecting the drug industry, but in essence, simply said the requirement that the patentee must work his

¹ *Ibid.*

² *Ibid.*, p. 516.

patent on a commercial scale in Canada is a fundamental of our Patent Act.¹ However true this may be of existing legislation, the Ilsley Commission recommended that the Patent Act be clarified to establish a quite different principle. It wrote:

"In short, as we foresee the effect of our proposals, it is this: the rights under patents will be potentially available to persons able and willing to work inventions in Canada, and whether or not capital and labour should be applied to their working will depend on such considerations as would normally affect such a decision in the absence of any patent rights.

"We see no particular merit in attempting, by a bias in our legislation, to direct investment to the working of new inventions. Rather, we believe, the public interest will best be served if investment finds its way into the most productive fields available rather than being artificially diverted into exploitation of new inventions where the value of the enterprise to the economy is doubtful".²

Three principal aims of the patent system have been suggested by Dr. Vannevar Bush. First it seeks to stimulate invention and the search for new applications of knowledge. Second it seeks to promote the introduction into public use of the new devices or processes. Third it seeks to eliminate secrecy and to make available to others skilled in the field full disclosure of the new ideas. The Restrictive Trade Practices Commission examined the extent to which these objectives were achieved in the special circumstances of the Canadian drug industry.³ About the third point the Commission concluded that no substantial benefit flows from the fact that discoveries are disclosed to the Canadian Patent Office. Most discoveries are made abroad so that when they are filed in Canada, they have already been made known to the world. In some cases know-how rather than the patent itself may be of primary importance and the patent system does nothing to disseminate this knowledge. Moreover the suggestion has been made that it is the inventor who is least sure he can guard his secret who is likely to be the most interested in obtaining the protection of the state in the exploitation of his monopoly.

With respect to the second objective the Commission concluded that patents are no prerequisite for the investment of funds in new lines of production. In the absence of patents, there would still be market opportunities for drug firms in Canada as there are at the present time for all other lines of production where patents are not important.

¹ Canadian Pharmaceutical Manufacturers Association, Answers to Specific Questions received from the Royal Commission on Health Services, *op. cit.*, p. 16.

² Royal Commission on Patents, Copyright and Industrial Design, *Report on Patents of Invention*, Ottawa: Queen's Printer, 1960, p. 81.

³ Restrictive Trade Practices Commission, *op. cit.*, p. 518.

As to the first objective there are a number of reasons why patent protection is not likely materially to stimulate research and invention in the Canadian drug industry. In the first place Canadian patents are overwhelmingly owned by foreigners who have in the past found it more efficient to concentrate research activity elsewhere. In the second place recent increases in research spending in Canada do not reflect a major shift in this situation but are largely due to increased clinical testing in Canada, now required under regulations of the Food and Drug Directorate.

In the third place the main Canadian research contributions have come from non-commercial activities of organizations like the Connaught Laboratories for example. Patents therefore cannot be a *sine qua non* of major advances in the drug field. In fact as we have indicated earlier, there is considerable controversy about how important the contribution of the patent system elsewhere has been to major advances in drugs. It does place a profit premium on the development of minor modifications which can be patented but which may have slight value or even questionable merit. In the fourth place there are suggestions that a plateau has been reached and that recent discoveries in the realm of fundamental research have now been fully exploited by the drug companies, and until a major break-through again occurs the same opportunities will not exist anywhere for the development work which the drug companies have so far engaged in outside Canada.

So far as research in Canada is concerned, even assuming that greater emphasis should be given to commercial rather than non-commercial organizations, there are rather clear alternatives to the patent system for encouraging such commercial research. Amendments to the Income Tax Act in 1961 provided for acceleration of the rate at which capital expenditures on research could be written off as expenses. In 1962 a new plan administered through the National Research Council provided that financial assistance for applied research and development would be given on a matching basis, with the government contributing up to 50 per cent of the cost of some projects. Also in 1962, corporate taxpayers undertaking to increase industrial research in Canada were permitted to deduct 150 per cent of their increased expenditures on scientific research for industrial purposes.¹

There appears little reason to believe that the abolition of patents in Canada would have any effect on research activities in the United States or Europe. On the other hand, the results of such research would not be withheld from the Canadian market because this market would continue to offer profitable marketing opportunities as it already does for non-patented goods.

¹ Committee for the Furtherance of Creative Research in the Pharmaceutical and Allied Industries, *op. cit.*, pp. 10-11.

On examining the evidence and the various arguments put forward for and against the retention of the patent system with respect to drugs in Canada, we have arrived at a conclusion similar to that of the Restrictive Trade Practices Commission: "It is the conclusion of this Commission that the control over drugs exercised through patents in Canada is disadvantageous to the users of drugs in this country by enabling the suppliers of such drugs to charge high prices in relation to the cost of production and distribution of the medicines."¹

In view of the circumstances, two courses of action appear to be indicated: one is to follow the proposal made by the Restrictive Trade Practices Commission and to recommend that patents on drugs be abolished in Canada; the other is to modify the existing patent system as it affects drugs by permitting compulsory licensing of imports and to streamline generally procedures as they relate to compulsory licensing together with an amendment of the Patent Act which would extend to provincial governments and their agencies the right to use patented inventions, a right presently extended only to the Crown in the name of the Government of Canada.

We are inclined to follow the second course which aims at making every attempt to use a modified patent system to achieve the desired objectives of bringing down drug prices in Canada while still encouraging manufacturing of drugs in this country where such undertakings are economically justifiable.

We realize, however, that notwithstanding measures that may be taken along lines suggested, prices of drugs may not be reduced significantly for various reasons. We believe it is only fair to the drug industry to serve it notice that the nation expects that drug prices can be brought down in Canada over the next five years to levels more comparable to those prevailing in other industrialized countries of the world. The time has come for the drug industry in Canada to recognize that it is not just like any other industry operating for gain but that it deals in products which are essential for health and indeed for life. Thus the industry must have a common interest with the public at large in making available to Canadians drugs of high quality at as low prices as can be achieved through economic means of production and distribution.

In view of the foregoing it may be desirable that the Federal Government consider delaying for five years a decision to implement the recommendations of the Restrictive Trade Practices Commission that patents on drugs be abolished, in order to ascertain whether alternative measures might be taken to achieve the same results within that period.²

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 523.

² See Chapter 2, Recommendation 68.

TRADE MARKS ACT

Earlier in this Report, we indicated that the name used for a marketing company in Canada is the same as that given for the marketing company in various other countries. No attempt was made to distinguish between related companies; parent and subsidiary were treated as the same company. Most of the large pharmaceutical companies which operate internationally, conduct their business in Canada by means of a subsidiary or affiliated company incorporated here.

In some instances, in the international comparisons of drug prices earlier referred to, a drug selling at a relatively high price in Canada, sells at substantially lower prices in other countries under the same brand name. This raises the question of why supplies are not imported to Canada from such countries at these lower prices. This, of course, refers to supplies of brand name, not generic drugs. Obviously a parent organization would not wish to spoil the market for its Canadian subsidiary, if it could prevent it, but this does not explain why independent Canadian importers do not work out an arrangement with foreign drug wholesalers for example. The spread is so great in some cases that the tariff alone would not appear to discourage such an arrangement. Moreover the reputation of the large pharmaceutical companies is such that there would be no problem about acceptance of their products by the medical profession as there sometimes is with imports under generic names. Put another way, the question may be asked, what permits prices of brand name drugs in Canada to be maintained above the landed cost of imports?

We have already referred to the feature of Canadian patent law which provides automatic protection to the holder of a process patent against imports of a product made by that process. Another important barrier appears to be that under the Trade Marks Act, the owner of a Canadian trade mark can monopolize the importation and distribution of a product bearing this mark, whether or not any production at all is carried on in Canada.

Harold G. Fox, Q.C., comments on the current standing of the law as follows:

"Even though interlocutory injunctions are rarely granted in cases of trademark infringement, there are occasions when the facts warrant the court in restraining a defendant from continuing to infringe. In *Remington Rand Limited v. Trans-World Metal Company Limited* the plaintiff, the owner in Canada of certain trademarks for use in association with electric shavers, sold in Canada shavers manufactured by its parent corporation in the United States and marked with the trademarks in question. The defendant imported from the United States electric shavers made by the same corporation and also imported others from Germany manufactured by a company associated with the American parent corporation. All the

shavers were marked with one or more of the trademarks concerned and were sold in Canada in association with those marks by the defendant. It was held that notwithstanding the relationship between the plaintiff and its United States parent corporation, the evidence of use of the marks by the defendants in Canada showed a strong *prima facie* case of infringement which should be restrained by interlocutory injunction. This decision obviously raises interesting questions for American corporations doing business in Canada, either by themselves or by the intervention of a subsidiary Canadian corporation. If, of course, the United States corporation is the owner of the trademark in Canada, it cannot complain if its own goods, marked with its trademark, are purchased in the United States and imported into Canada. But, in the case where the trademark in Canada is owned by a subsidiary Canadian corporation, it will be seen from the judgment in the above action that the United States corporation's goods, although properly marked with the trademark in the United States, cannot be imported into Canada in infringement of the trademark owned by its subsidiary Canadian corporation".¹

To what extent Canadian drug companies have threatened trade mark infringement action against potential importers, we do not know. However the power to take such action must itself constitute an important deterrent to the importation of brand name drugs by independent distributors. Whether or not Canadian drug companies are in most cases actually owners of the trade marks or simply registered users would not appear to be significant, because the parent organizations presumably could transfer ownership of their Canadian trade marks to their Canadian subsidiaries if necessary.

The Canadian Federation of Agriculture claims that the protection provided under the Trade Marks Act adds to the cost of drugs, and that in the interest of bringing down drug prices no trade marks should be granted on prescription drugs in the future.² We do not believe that it is necessary at this time to go as far as the complete removal of trade mark protection for pharmaceuticals but we believe it may be desirable to modify the trade mark system as far as drugs are concerned.

One way of achieving such an objective would be to amend Section 20 of the Trade Marks Act to make it clear that no infringement could be claimed where the drugs in question are manufactured by a related company. Section 2 (r) of the Trade Marks Act designates related companies as "companies that are members of a group of two or more companies, one of which, directly or indirectly, owns or controls a majority of the issued voting stock of the others".

Such an amendment would to a large extent take care of the problem we are facing because it is usually exports by distributors in the United States which are presently excluded, and in nearly every case the parent

¹ *Canadian Patent Reporter*, Toronto: Canada Law Book Co. Ltd., January 1962, p. 192.

² The Canadian Federation of Agriculture, *op. cit.*, Submission to the Restrictive Trade Practices Commission, Regarding an Inquiry in Connection with the Manufacture, Distribution and Sale of Drugs, May 1961, p. 8.

manufacturing company in the United States and the subsidiary manufacturing company in Canada would be related companies within the meaning of the Act.

The effect of the proposal would be to make it possible for Canadian retailers or other bulk drug purchasers to purchase a drug from United States wholesalers or their distributors in cases where such drugs are protected by trade marks both in the United States and Canada and where Canadian prices were significantly higher than United States prices.

At present any Canadian firm, institution or individual buying such drugs in the United States might be facing a charge of infringement under the Canadian Trade Marks Act. United States parent companies could conceivably attempt to influence their distributors not to export to Canada. But if they were to attempt to do this, they would likely be running counter to the provisions governing restraint of trade in the United States.

Hence, the end result would be the encouragement to increasing competition between Canadian subsidiaries of United States parent companies and United States distributors exporting to Canada, with such competition likely to bring lower prices for Canadians of certain drugs protected under the Trade Marks Act probably, in the main, higher priced drug items.¹

TARIFFS

A few drugs may be imported into Canada duty-free but most are subject to various rates of duty. Certain drugs are dealt with specifically in the schedules to the Customs Tariff Act but the great majority of imports come under the general provisions. Single drugs of a class or kind made in Canada are dutiable under Tariff Item 711. Single drugs of a class or kind not made in Canada are dutiable under Tariff Item 208t. Combinations and mixtures of drugs are dutiable under Tariff Item 220. Details of these tariff items are given on the opposite page.

Since all of these are *ad valorem* duties rather than specific duties it is obvious that the value to be assigned to the imported product is of the highest importance. In order to protect Canadian manufacturers of goods of the same class or kind as those imported from being undercut by what might be considered unfairly low prices, the value for duty purposes must not be less than the fair market value in the country of origin. The fair market value is defined to be the price at which goods are sold in the same or substantially the same quantities for home consumption in the ordinary course of trade and under competitive conditions, to purchasers dealing with

¹ See Chapter 2, Recommendation 70.

Tariff Item		British Preferential Tariff	Most Favoured Nation Tariff	General Tariff
208t	All chemicals and drugs, n.o.p., of a kind not produced in Canada.....	Free	15%	25%
220	All medicinal and pharmaceutical preparations, compounded of more than one substance, including patent and proprietary preparations, tinctures, pills, powders, troches, lozenges, filled capsules, tablets, syrups, cordials, bitters, anodynes, tonics, plasters, liniments, salves, ointments, pastes, drops, waters, essences and oils, n.o.p.			
	(i) When dry.....	17½%	25%	25%
	GATT (1/1/48).....	—	20%	—
	(ii) Liquid, when containing not more than two and one-half per cent of proof spirit.....	20%	40%	40%
	GATT (1/1/48).....	17½%	—	—
	GATT (6/6/51).....	—	20%	—
	(iii) All others*.....	60%	60%	60%
	GATT (6/6/51).....	—	25%	—
*	Any article in this item containing more than 40 per cent of proof spirit shall be rated for duty at per gallon..... and	\$3.00 30%	\$3.00 30%	\$3.00 30%
	Drugs, pill-mass and preparations, not including pills or medicinal plasters, recognized by the British or United States Pharmacopœia, the Canadian Formulary or the French Codex as officinal, shall not be held to be covered by this item.			
711	All goods not enumerated in this schedule as subject to any other rate of duty, and not otherwise declared free of duty, and not being goods the importation whereof is by law prohibited.....	15%	25%	25%
	GATT (1/1/48).....	—	20%	—

the vendor at arm's length who are at the same or substantially the same trade level as the importer. Obviously the determination of the fair market value may present considerable difficulties. The Restrictive Trade Practices Commission referred to the matter as follows:

" . . . Mr. J. S. Deachman [appraiser for the Department of National Revenue], in his evidence, pointed out that many drug manufacturing companies in Canada are subsidiaries of companies in the United States and may secure supplies of basic chemicals or processed drugs from the parent company. If the American company purchased a chemical in large quantities and then transferred a portion to its Canadian subsidiary, the valuation for duty would be based on the market price of the quantity supplied to the Canadian company. If a market price did not exist for such a quantity then the price per unit paid by the American company would be advanced by 5 per cent, for customs valuation purposes. If the chemical purchased by the American company went through a process of manufacture before being supplied to the Canadian subsidiary, the value for duty would be advanced up to 50 per cent to cover added material, labour and overhead. If the drug entered Canada as a finished product in bulk for packaging the valuation for duty would be the original cost of material increased by up to 75 per cent and if the product was imported in packages in finished form but unlabelled, for labelling in Canada, the advance in cost would be up to 100 per cent. Such valuations are made under section 38 of the Customs Act when there is no prevailing market price for the particular quantities or forms in which materials are supplied by the parent company in the United States to its Canadian subsidiary".¹

With respect to the matter of classifying a drug for tariff purposes there is of course no problem where the drug is specifically provided for under the tariff. When for purposes of classification it is necessary to interpret the meaning of "a kind not produced in Canada" this phrase is construed strictly. For example an imported chemical would have to be exactly the same chemical and of the same quality as the domestic production to be classified in the higher tariff category. When there is a question of the application of a dumping duty a much broader meaning is given to the word "kind".²

The Restrictive Trade Practices Commission examined in detail the significance of the dumping duty provisions in the tariff in relation to the drug industry. The Commission observed in part as follows:

"Dumping duties are applied to drugs which are considered to be of a class or kind made in Canada, when the price charged the Canadian importer is less than their fair market value in the country of origin. The amount of the duty is the difference between the two. When there is an established market for the imported drugs in the country of origin, the prices at which the drugs are sold in such market determine the fair market value. When there is no such market—e.g., when the drugs are imported as raw materials, or in a partly manufactured state, or unpackaged, or

¹ Restrictive Trade Practices Commission, *op. cit.*, p. 176.

² *Ibid.*, p. 175.

unlabelled, but sold in the country of origin as finished products only; or when they are sold in the country of origin to wholesalers or retailers only and imported as finished products by a Canadian manufacturing firm; or when the foreign exporter has manufactured or bought a very large quantity of the goods and the Canadian importer has bought a relatively small portion thereof—in all such cases the value for duty is determined in such manner as the minister of National Revenue prescribes under section 38 of the Customs Act.

“As shown in section 2 of Chapter IX and section 1 of Chapter XIX, the dumping duty provisions, when applied to dealings between parent and subsidiary companies, sometimes lead either to higher prices for drugs being charged in Canada than in the country of origin or to a distortion in the profit ratios of the companies concerned. This situation arises when a drug is sold in the country of origin to wholesalers or retailers only and imported as a finished product by the Canadian manufacturing subsidiary of the exporting company. In such a case, the fair market value is determined by prices to wholesalers or retailers in the country of origin and prices at the corresponding level will be higher in Canada than abroad to the extent of the mark-up taken by the Canadian subsidiary for its own operations. To the extent that the latter's mark-up is less than would normally be taken, the profit ratios of the parent and the subsidiary are distorted. Even in an extreme case where the latter operates at a loss, one would expect the over-all operations to be profitable and the profit realized by the parent to more than offset the loss taken by the subsidiary.

“The Commission was informed that dumping duties are seldom imposed on drugs. A United States company, not familiar with the Canadian dumping duty rules, might find a first shipment had been subjected to payment of dumping duty, but would never have its shipments caught a second time. The practice of most American companies, when they intend to supply some new drug products to their Canadian subsidiaries, is to approach the Canadian Customs Department, tell the facts and ask that the fair market value in the United States be fixed. The Canadian subsidiary is then charged a price which is at least as high as the determined fair market value and may well be higher than the price the Canadian subsidiary would have been charged in the absence of the dumping duty rules. When this is the case, the effect of the application of the dumping duty rules to imports of drugs is to put extra money into the pocket of the United States exporter, not into the Canadian Treasury.

“To what extent are Canadian manufacturers of ethical drugs, and more particularly of antibiotics and tranquillizers, actually protected by the dumping duty provisions. As shown in the Green Book (para. 112, page 63), the drug manufacturing industry in Canada is very largely in the hand of subsidiaries of foreign companies, of which the great majority are United States companies. Since the purchase of Frank W. Horner Limited by Carter Products Inc., Charles E. Frosst & Co. is the only independent Canadian firm at all comparable in size to any of the larger United States subsidiaries in this country. At the time of the hearings, very little manufacturing of basic antibiotic or tranquillizing drugs was done in Canada. The great majority of basic drugs of these kinds was imported, Canadian manufacturing being mainly confined to refining, preparing dosage forms and packaging

“For purposes of the dumping duty provisions, each group—the antibiotics and the tranquillizers—is considered as a class. As at least one tranquillizer, meprobamate, and one antibiotic, chloramphenicol, are made in Canada, all tranquillizers and antibiotics are subject to the application of the dumping duty rules, when imported in dosage forms. However, the

Commission was informed that antibiotics may be exempted when imported in bulk as basic drugs, if they are to be used in the manufacture of some pharmaceutical compounds not regarded as being of the same class or kind as any antibiotic manufactured in Canada.

"In view of the foregoing circumstances the Commission inclines to the view that, with respect to ethical drugs and more especially antibiotics and tranquillizers, the dumping duty rules may sometimes operate to increase the costs of some Canadian importers without giving any substantial protection to Canadian manufacturers".¹

We find that tariffs on drugs and on equipment used in the research, development and manufacturing of drugs add to the cost of drugs sold in Canada. Because of the marketing system which prevails in this country, the ultimate effect on prices is to multiply the impact on the consumer who has to purchase these drugs.

We believe that in the interest of lowering prices of drugs in Canada, while still maintaining high quality of pharmaceuticals a review is required of the appropriate tariff items as presently applied to drugs and to equipment used in research, development and manufacturing of drugs.

We are particularly concerned with those drugs that would be approved for inclusion in a national health plan, the cost of which would be borne in part by the consumer and in part by the taxpayer. We believe it should be part of the Government's policy to do everything it can to save money for both the taxpayer and the consumer thus serving the best public interest.

It may therefore be desirable for the Canadian Tariff Board to examine the whole area of tariffs on drugs and on equipment used in research, development and manufacturing of drugs with a view to establishing which tariffs covering what items can be reduced or removed without causing serious injury to established reputable drug manufacturing firms in Canada. Administrative arrangements affecting 'anti-dumping' regulations as they apply to drugs may also have to be reviewed.²

OTHER LEGISLATION

The sale and distribution of drugs are controlled by specific federal and provincial legislation which overlaps to some extent. The basic distinction between the two is that provincial legislation deals primarily with druggists and drug stores while the federal legislation deals primarily with drugs. The three more important pieces of federal legislation are the Food and

¹ *Ibid.*, pp. 505-507.

² See also Chapter 2, Recommendation 72.

Drugs Act, the Opium and Narcotics Control Act, and the Proprietary or Patent Medicine Act. The last-mentioned Act does not relate to prescription drugs and we therefore do not deal with it. The other two Acts are referred to later on insofar as they relate to complaints received by this Commission.

Legislation dealing with the practice of pharmacy and regulating the handling and sale of drugs varies among the provinces. The basic purpose of the provincial pharmacy acts is to establish the professional qualifications required of practising pharmacists and to channel the compounding, dispensing and sale of drugs and medicines of certain kinds through drug stores or hospitals.

Each provincial act says that "except as otherwise provided" no one except a pharmacist may dispense prescriptions.¹ Exemptions are usually made so that medical practitioners, dentists and veterinary surgeons may dispense prescriptions for their own patients. The provincial acts prescribe the academic courses and the examination and apprenticeship requirements for registration as druggists within the province. Usually provincial legislation sets up a body of pharmacists to govern the practice of pharmacy in the province subject to the general requirements of the legislation. In some provinces there are in addition to the governing body, separate trade associations operating either locally or in a province-wide basis. Even where there is a separate province-wide trade association, the official governing body performs a dual function. It carries out its statutory duties of licensing pharmacists and so on, but it also concerns itself with the economic welfare of the druggists as businessmen, a typical trade association activity. Both the Director of Investigation and Research under the Combines Investigation Act,² and the Restrictive Trade Practices Commission expressed concern about a conflict of interest where the same body performs the two functions. It is not difficult to visualize a conflict arising between a governing body's concern with professional standards and its concern with price competition. The possibility of conflict becomes clearest perhaps in the area of control exercised by members of the profession over the conditions of entry of new competition. In Ontario for example no person may operate a drug store unless he is a registered pharmaceutical chemist or, if a corporation, unless the majority of the directors are pharmaceutical chemists and, in addition, unless the majority of each class of shares is owned by and registered in the name of pharmaceutical chemists. Obviously this would prevent most corporations, including chain and department stores, from operating pharmacies themselves.³

¹ Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

² Green Book, pp. 10-11.

³ *Ibid.*, p. 9.

In addition to setting up in effect a licensing system for the profession of pharmacy, provincial pharmacy acts also provide for certain restrictions on the sale of drugs. For present purposes we may say that three main kinds of drugs are affected. There is first of all a group of drugs which may be sold only on prescription. This group includes all drugs restricted by federal legislation to distribution by medical prescription. It also includes additional drugs which provincial authorities believe require the safeguard of medical prescription for distribution. This additional group of drugs varies among provinces. A second main group of drugs may be sold only to persons known to the registered pharmacist and for which the purchaser must sign in a sales register maintained for the purpose. This group of drugs is usually referred to as the poison schedule. The third main group of drugs is made up of those pharmaceutical preparations which may be handled only by a registered pharmacist but in respect of which over-the-counter sale is permitted.¹

The Government of Manitoba brought to our attention that the regulations as presently administered by the Narcotics Control Act and the Food and Drugs Act are creating difficulties for hospitals in dispensing prescribed drugs. We quote:

"... the costs of Medicare prescriptions filled by hospital and retail pharmacies are substantially different. Although the hospital enjoys certain purchasing privileges by comparison with the retail pharmacies, it is considered that these do not adequately explain the difference between the average hospital prescription cost of \$1.58 and the average retail pharmacy prescription cost of \$2.82 and \$3.07. It is obvious that savings can be effected by the Government if recipients of Medicare are encouraged to have their prescriptions filled at the general hospital pharmacies. This practice is hampered, however, by regulations under the Narcotic Control Act and the Food and Drugs Act which prohibit hospital pharmacies from filling prescriptions containing a narcotic or a controlled drug. Not only are these prescriptions eliminated, but recipients of Medicare tend to turn to the retail pharmacies as they become aware of the limited service which the hospitals are permitted to provide."²

The Manitoba Government has suggested that we may make the following recommendation: "*The Food and Drugs Act and the Narcotics Control Act be amended so that, with suitable controls, hospital pharmacies may be permitted to fill Medicare prescriptions containing narcotics and controlled drugs*".³ We are in general agreement with this recommendation and we say so in Chapter 2.⁴

¹ Department of National Health and Welfare, Research and Statistics Division, *op. cit.*

² The Government of Manitoba, *op. cit.*, p. 49.

³ *Ibid.*, pp. 49 and 50.

⁴ See Chapter 2, Recommendation 79.

VOLUNTARY PRICE RESTRAINT

We have made the point earlier that expenditures on drugs in many institutions may place a heavy burden on those families that are hit hard by protracted illness or special diseases requiring high priced drugs. Our views, however, are not shared by the Canadian Pharmaceutical Manufacturers Association as indicated in a statement issued by the Association to the effect that prices of Canadian-made drugs are in line with the Canadian worker's purchasing ability and the economy of the country.¹

In our view drug prices should be as low as possible taking into account quality and reasonable costs of production and distribution of drugs in Canada. Hence we feel that it should be part of the industry's objective to do all it can to achieve economies in the production and distribution of drugs as will assist the industry to bring drug prices in Canada more in line with drug prices prevailing in other industrialized nations while still assuring satisfactory quality.

In discussing patents affecting drugs earlier in this chapter we have suggested that the Canadian Government may serve notice to the drug industry that it expects the industry to make earnest efforts over the next five years aiming at a reduction of drug prices to levels more comparable to those prevailing in other industrialized countries and more acceptable to the Canadian public where this can be done through more efficient production and distribution without affecting the quality of pharmaceuticals used in Canada. We have made the additional point that if a national drug programme were implemented in Canada, efforts at price reduction by the industry would become essential in order not to burden such a plan with excessive and unnecessary costs.

To this end we would suggest that the drug industry in Canada consider the possibilities of a programme of voluntary restraint of drug prices. Such a programme has been tried with great success by the pharmaceutical industry in the United Kingdom.

In June, 1957, the British Ministry of Health worked out an arrangement with the pharmaceutical industry designed to achieve price regulations of drugs by voluntary effort on the part of the industry. The plan ran for three years on a trial basis. Its main features included:

- "(i) If any preparation had substantial exports (20 per cent or more of output) the home price should be no more than the export price;
- "(ii) If any preparation which was not substantially exported had an exact standard equivalent, its price should be no higher than that of the equivalent;

¹ Statement by the Canadian Pharmaceutical Manufacturers Association, as reported in *The Globe and Mail*, Toronto, November 9, 1963.

- “(iii) For other preparations, the maximum price should be calculated by the specially constructed trade price formula. This formula added to an allowance nominally related to the cost of basic ingredients certain additional allowances called on-cost and processing and packaging allowances and provision for wholesalers’ discount to make up the total price;
- “(iv) Any manufacturer was free to negotiate a price separately with the Health Departments if he considered the appropriate formula price unsuitable or if for any reason none of the formulae was applicable; other features of the scheme are
 - (a) The “undertaking”
- “(v) Because the prices arrived at by using the formulae were sometimes higher than current prices, the Association of the British Pharmaceutical Industry gave an undertaking that when this was so the current prices would not be increased except where an increase was justified by an increase in costs;
 - (b) The “three years freedom”
- “(vi) The scheme would apply to a preparation only after it had been on the market for three years (for those three years the price would be at the manufacturers’ discretion).

The whole scheme would be on trial for three years, after which the Health Departments and the Association of the British Pharmaceutical Industry would be free to consider it in the light of experience.”¹

The Hinchliffe Committee reviewed the effectiveness of the programme in 1959 and it concluded that the trial effort had proven to be very successful both in the interest of the industry and the public at large resulting in substantial financial savings to the British taxpayer as far as the drug programme was concerned.

The Hinchliffe Committee concluded: “In our view this scheme is a very valuable contribution, enabling a business arrangement to replace the ordinary operation of supply and demand, which is impracticable in this field. It is a considerable step forward in our view that the industry should recognize and accept the need for price regulation.”² The voluntary programme of price restraint with respect to drugs has been continued in a modified manner.³

Methods of drug distribution and the institutional arrangements prevailing in Canada are quite different from those applying to the United Kingdom. Still, the Canadian drug industry might find it useful to examine the experiences and the methods used by the pharmaceutical industry in the United Kingdom with a view to ascertaining whether some of the lessons learned might be adapted to the Canadian situation. Such a study might be sponsored jointly by the drug industry and the Canadian Government,

¹ Final Report of the Committee on *Cost of Prescribing*, *op. cit.*, pp. 69-70.

² Final Report of the Committee on *Cost of Prescribing*, *op. cit.*, p. 70

³ This modified programme came into operation in January 1961, to be in force to June 30, 1964. Great Britain, *Ministry of Health, Report, 1960*, Part I, Health and Welfare Services, “Command Paper 1418”, London: H.M.S.O., 1961, p. 75.

assisted by the Drug Advisory Committee, and such provincial governments as wish to participate, and form the basis of possible proposals of a voluntary drug price restraint programme that might be developed in Canada over the next five years.¹

We emphasize that we consider any efforts to evolve a system of voluntary price restraint with respect to drugs that would specifically meet Canadian requirements as a supplement to action that should be taken by governments along lines suggested earlier in this chapter and specified in Chapter 2.²

¹ See Chapter 2, Recommendation 73.

² See Chapter 2, Recommendations 64-72.

Health Insurance and Government Action

OBJECTIVES AND METHODS OF HEALTH INSURANCE

As we outlined in Chapter 10, the issue of how to pay for health services has been a public concern since World War I. An important part of the issue was resolved in 1957 when hospital insurance on a universal basis became a joint responsibility of federal and provincial governments.

The question of prepaying medical services was at once the least controversial and the most controversial issue to be argued before the Commission. There was almost complete agreement that medical insurance should be available to all. As spokesmen for the Canadian Medical Association stated, "Insurance to prepay the costs of medical services should be available to all regardless of age, state of health, or financial status".¹ There was also near unanimity among spokesmen for "consumer" groups, Trans-Canada Medical Plans, the insurance industry, and for the health professions, that some form of government action was necessary to bring about the desired objective. But at the same time, there was strong disagreement as to the method and the scope of government action required.

It is unfortunate that the heavy emphasis on the payment for services of physicians and surgeons, frequently referred to as "medicare", tended to obscure the importance of extending any programme to include the whole spectrum of health services.

The Commission is of necessity concerned not only with medical services, but with all health services. Others share this concern. This was also evident in the briefs presented to us and in our hearings. But again there was disagreement as to the method and scope of government action. The many submissions on the question of how to provide and pay for health services consisted of three related though basically different approaches: (1) an insurance approach, (2) a prepayment approach, and (3) a health services approach.

¹ *The Canadian Medical Association*, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, p. 79.

Insurance Approach

This approach is best exemplified by the indemnity contracts sold by commercial insurance companies. The contract is between the company and the insured person who is paid a specified sum in the event of receiving medical or surgical services as specified in the contract. Usually, the patient bears part of the cost in the form of a "deductible" or "co-insurance". There is no direct relationship between the insurance company and the providers of services.

The contract is exclusively between the insurance company and the consumer of services, for the purpose of assisting him in paying part or all of the medical or surgical (and sometimes other) bills he may incur. It is not the function of the company, as such, to be concerned principally with the supply of health resources.

Under this approach the population falls by definition into two groups:¹

- (1) the "insurable" (those who represent risks acceptable to the insurer) and
- (2) the "non-insurable" (the chronically ill, the physically handicapped, and the aged, or those who represent abnormal risks).²

The *insurable* group must be divided, again, into two groups:

- (1) those who can pay the necessary premiums from their own resources, and
- (2) those who cannot pay all or any part of the premiums and who must, therefore, be subsidized, presumably by government.

Prepayment Approach

This approach is exemplified in the "service" contracts of the medical profession-sponsored prepayment plans. Except in those plans permitting "extra-billing" there are usually few, if any, financial transactions between the patient and his physician; the prepayment plan pays the physician directly on a fee-for-service basis. Here, again, the prepayment approach is not specifically concerned with the availability of services.³ Like the commercial insurance agency, it leaves the question of availability of health resources to the operation of the market.

¹ For a more detailed analysis, see Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 3.

² Coverage for this group can be obtained in many instances but at a price which only a relatively few can pay.

³ Prepayment plans do make physicians' services available on a less onerous financial basis but they are not primarily concerned in assuring an adequate supply of physicians where deficiencies exist.

Because of prepayment, of course, the effective demand for services is expanded and more physicians are likely to be attracted to areas where a large volume of coverage is in effect.¹ Although the "service" plans do not make quite the same distinction between "insurable" and "non-insurable" persons in enrolling individuals not in groups, they have imposed age limitations and waiting periods to guard against an adverse selection of risks. These have been reduced in recent years.²

Again, the population must be divided into two groups:

- (1) those who can pay the full premiums from their own resources, and
- (2) those who will require subsidy, presumably by government.

Health Services Approach

This approach, advocated chiefly by consumer groups, emphasizes that the market is not a satisfactory mechanism for determining availability of and access to health services. These groups emphasized that, just as with hospital care, the resources of the nation must be so planned and organized that they can be used to provide all health services where they are needed to raise the level of health of the entire nation. They urged broader objectives including preventive services, drugs, dental services, and home care, as well as provision for the financial consequences of illness or injury.

In this approach, the question of insurability or non-insurability of people is not a factor. All citizens should be covered and those considered non-insurable by voluntary insurance standards need coverage more than anyone else. The tax structure is the device to bring the direct costs of health insurance within the capacity of all citizens to pay.

Scope of Government Action

In addition to differences about objectives and the methods of achieving them there is also the question of the role of government in the area of health services. Specifically this question has come up in two forms, the nature of public subsidies and compulsory participation in health care programmes.

Two approaches have been presented in the area of public subsidies. The first specifies that government funds should be used to *subsidize family heads or individuals* who need help to enable them to pay premiums to the insurance company or prepayment plans. That is, after setting a premium that would cover the costs of providing medical care for all citizens, individuals who cannot afford this premium must be identified and certified for assistance through some form of means test.

¹ One example of this effect is the Swift Current Medical Plan, where the introduction of universal insurance resulted in a near doubling of the supply of physicians.

² See footnote 2, p. 724.

The alternative approach specifies that the programme should be sponsored by governments and that general tax revenues be used to *subsidize an insurance fund*, so that premiums may be brought within the reach of nearly all, or removed completely as in those provinces financing their hospital insurance programmes from general revenue or sales taxes. A means test would not be necessary except for those in receipt of general welfare payments. If it were to be extended to more than these groups the process of means testing would present problems because of the number and classes of persons involved.

There are two questions, therefore, that arise from these alternatives; the first is a question of principle, and the second a question relating to the size of the task. There is disagreement on both of these. First, some groups, e.g., the medical profession,¹ the Insurance Companies,² and the Canadian Manufacturers' Association,³ support the means testing of individuals who require assistance. Spokesmen for consumer groups, those who would, in fact, be among those subject to means testing, are opposed. These include the Canadian Federation of Agriculture⁴ and the Canadian Labour Congress,⁵ both of whom object to the stigma of a means test, to the lack of equality in its application, as well as to the administrative costs. Second, there is disagreement as to how many Canadians must be means-tested. The Canadian Medical Association⁶ suggests nearly 3,000,000, for medical care alone. Others believe it will be more.

In the area of compulsory participation in the Federal-Provincial Health Services Programme again there are contrasting opinions. The necessity for such legislation is accepted and approved by those representing consumers and opposed by those representing the physicians and dentists, the prepayment plans, and the insurance industry.

In evaluating these approaches the points of issue then appear to be three:

1. The ability of voluntary insurance to provide universal comprehensive coverage.
2. The problems of subsidy including the number of persons requiring a means test.
3. The issue of compulsion.

We examine various aspects of these points below.

¹ *The Canadian Medical Association, op. cit.*, p. 87.

² *Canadian Health Insurance Association*, Supplementary Submission to the Royal Commission on Health Services, Toronto, 1962, p. 54.

³ *The Canadian Manufacturers' Association, op. cit.*, p. 8.

⁴ *The Canadian Federation of Agriculture, op. cit.*, p. 11.

⁵ *Canadian Labour Congress, op. cit.*, p. 25.

⁶ *The Canadian Medical Association, The Cost and Ability to Pay for Medical Services Insurance in Canada and Its Provinces*, Department of Medical Economics, Toronto 1962, p. 22.

ABILITY OF VOLUNTARY INSURANCE TO PROVIDE
UNIVERSAL COMPREHENSIVE COVERAGE

The first issue relates to the ability of voluntary insurance to provide universal coverage, and the costs involved. For this purpose, it is necessary to examine carefully the numbers of persons insured, amount and kinds of coverage now held, benefits provided, and the costs of providing insurance protection. It should be emphasized that, except for those having "major medical" contracts, we are dealing here almost exclusively with medical services alone, and not the full range of health services.

Number of Persons Insured

Precisely how many people are insured for health services?

From the data in Table 18-1, and the data in Chapter 10 the following statements can be made:

- (1) Out of a total of 18.2 million Canadians in 1961 approximately 10.7 had some form of medical insurance or prepayment coverage. These included:

	'000
(a) Commercial insurance and prepayment plans (relatively complete medical and surgical in and out of hospital).	4,776
(b) Commercial insurance and prepayment plans ¹ (major medical—relatively complete coverage all health services except dental)	1,871
(c) Commercial insurance and prepayment plans (limited benefits), ²	2,978
(d) Recipients of Public Assistance	500
(e) Armed Services, RCMP, Indians, Eskimos, and institutional	500
(f) Swift Current Health Region	50
Total	10,675

- (2) Over 7.5 million Canadians did not have any medical care insurance whatever.

¹ Excludes major medical contracts designed to supplement other more basic medical and surgical contracts. These are included in (c). The consequences of this adjustment would be that in 1961 a total of 1.3 million persons shown under (c) had relatively complete coverage.

² This includes an undetermined number holding supplementary major medical benefits.

TABLE 18-1 NUMBER OF PERSONS WITH MEDICAL INSURANCE AND/OR PREPAYMENT CONTRACTS, INDIVIDUALS AND DEPENDANTS, BY TYPE OF COVERAGE AND CLASS OF CARRIER, CANADA, 1961

Class of Carrier	Type of Coverage						
	Surgical Benefits Only (1)	Medical Care Only (No Surgery) (2)	Surg. Procedures and In-Hospital Medical Care (3)	Surg. Procedures and Medical Care in Hospital, Clinic, Home, Office (4)	Major Medical Expense Comprehensive or Basic (5)	Major Medical Expense Supplementary (6)	Total Excluding Major Medical Supplementary (7)
<i>Group Contracts</i>							
Stock Companies							
Individuals*	68,735	327	175,839	285,066	128,950	174,927	658,917
Dependents	114,522	642	317,756	526,772	236,592	321,742	1,196,284
Total	183,257	969	493,595	811,838	365,542	496,669	1,855,201
Mutual Companies							
Individuals	85,653	8,181	125,906	98,024	398,257	198,140	716,021
Dependents	149,122	14,674	230,915	149,948	1,014,694	268,878	1,559,353
Total	234,775	22,855	356,821	247,972	1,412,951	467,018	2,275,374
Fraternals & Co-operatives							
Individuals	9,964	—	1,719	3,891	4,514	6,267	20,088
Dependents	18,092	—	2,738	5,044	9,601	13,005	35,475
Total	28,056	—	4,457	8,935	14,115	19,272	55,563
Prepayment Plans							
Individuals	4,173	169	403,891	968,714	—	121,244	1,376,947
Dependents	7,385	307	627,292	1,836,074	—	190,618	2,471,058
Total	11,558	476	1,031,183	3,044,555**	—	311,862	4,087,772**
All Group Contracts							
Individuals	168,525	8,677	707,355	1,355,695	531,721	500,578	2,771,973
Dependents	289,121	15,623	1,178,701	2,517,838	1,260,887	794,243	5,262,170
Total	457,646	24,300	1,886,056	4,113,300**	1,792,608	1,294,821	8,273,910**

<i>Non-Group Contracts</i>							
Stock Companies							
Individuals.....	18,433	773	16,456	66,324	5,898	442	107,884
Dependents.....	23,977	783	20,892	128,250	8,079	480	181,981
Total.....	42,410	1,556	37,348	194,574	13,977	922	289,865
Mutual Companies							
Individuals.....	38,890	4,330	37,376	8,324	21,154	351	110,074
Dependents.....	37,409	3,460	33,133	7,030	24,977	311	106,009
Total.....	76,299	7,790	70,509	15,354	46,131	662	216,083
Fraternal & Co-operatives							
Individuals.....	10,257	1,582	12,657	6,095	6,371	4,945	36,962
Dependents.....	20,395	3,796	5,998	3,673	11,983	8,194	45,845
Total.....	30,652	5,378	18,655	9,768	18,354	13,139	82,807
Prepayment Plans							
Individuals.....	—	11,041	135,559	157,587	—	—	304,187
Dependents.....	—	7,569	164,834	228,368	—	—	400,771
Total.....	—	18,610	300,393	442,769**	—	—	761,772**
All Non-Group Contracts							
Individuals.....	67,580	17,726	202,048	238,330	33,423	5,738	559,107
Dependents.....	81,781	15,608	224,857	367,321	45,039	8,985	734,606
Total.....	149,361	33,334	426,905	662,465**	78,462	14,723	1,350,527**
<i>Total Group and Non-Group Contracts</i>							
Individuals.....	236,105	26,403	909,403	1,594,025	565,144	506,316	3,331,080
Dependents.....	370,902	31,231	1,403,558	2,885,159	1,305,926	803,228	5,996,776
Total.....	607,007	57,634	2,312,961	4,775,765**	1,871,070	1,309,544	9,624,437**

**"Individuals" are here defined as contract (or group certificate) holders.

**Total includes 1960 coverage reported by Group Medical Services and Medical Services Incorporated, Saskatchewan. Coverage of these two plans was not available separately for contract holders and dependants. The total shown exceeds the number of individuals and dependants for this reason.

SOURCE: Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Table 2-1.

Adequacy of Coverage

Although 10,675,000 Canadians had some form of medical insurance or prepayment coverage, the question still remains, how adequate is this coverage in protecting against the costs of medical care.

Table 18-2 summarizes the claims paid on behalf of insured persons, and the average claims paid per person covered, from which an assessment of adequacy of coverage can be made.

These statements of average claims paid per person covered need to be examined in the light of actual medical requirements. A study prepared for the Commission¹ revealed that in 1961, expenditures made by the Canadian population for physicians' services averaged \$21 per capita. The expenses incurred by those persons having insurance or prepayment coverage can be shown to be higher, probably about \$25 per capita. Although available estimates are crude, the data suggest that those without insurance or prepayment averaged about \$15 per capita.

The Commission's studies also indicate that a reasonable estimate of medical expenses are \$27 per capita for persons covered by the prepayment plans and \$23.50 for those insured by the commercial carriers.²

Table 18-2 also contains a comparison of the average total claims paid out per capita, as reported by commercial carriers and prepayment plans, with the estimates of per capita medical expenses, including a statement of the percentage of these expenses paid by existing coverage. It will be noted that the prepayment plans rank high, paying, on the average, an estimated 80 per cent of all expenses for physicians' services incurred by their subscribers.

This is substantially more than the proportion of these services paid for by either stock or mutual companies. The lower average claims paid by the insurance companies reflect the presence of deductibles, and co-insurance factors, as well as limited coverage and benefits. The higher average payments made by the prepayment plans reflect their success in the introduction of relatively complete "first dollar" coverage.

The data show, for all carriers combined, there was an appreciable difference between group and non-group contracts in terms of average claims paid per person covered in 1961. There were also major differences between group and non-group contracts for certain classes of carrier. For stock companies, the average non-group claim is just over one-third that paid on behalf of persons insured under group contracts. The

¹ Berry, *op. cit.*, Chapter 4.

² For the extensive analysis supporting these estimates, see *Ibid.*, Chapters 4-6.

TABLE 18-2 AVERAGE CLAIMS PER CAPITA AS PERCENTAGE OF ESTIMATED TOTAL EXPENSE FOR PHYSICIANS' SERVICES, CANADA, 1961

Type of Carrier	Estimated Coverage (Persons)	Estimated Per Capita Expense For Physicians' Services	Reported Claims Paid Out Per Capita	Claims as Percentage of Estimated Total Expense
	Number	\$	\$	%
Stock Companies				
Group.....	1,855,201	23.50	14.49	61.7
Non-group.....	289,865	23.50	5.04	21.4
Mutual Companies				
Group.....	2,275,374	23.50	15.29	65.1
Non-group.....	216,083	23.50	10.71	45.6
Co-operatives and Fraternal Organizations				
Group*.....	55,563	23.50	5.77	24.6
Non-group.....	82,807	23.50	6.28	26.7
Prepayment Plans				
Group.....	4,087,772	27.00	21.51	79.7
Non-group.....	761,772	27.00	21.94	81.3
All Carriers				
Group.....	8,273,910	25.35	18.40	72.6
Non-group.....	1,350,527	25.47	15.41	60.5
No Carrier (uninsured).....	8,613,563	15.48	(NIL)	0.0
Total Canadian Population.....	18,238,000	21.01	8.94	42.6

*Based on returns from four carriers.

SOURCE: Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

twenty-one per cent of total physicians' services paid by these companies under non-group contracts does not in our view, constitute adequate protection. In mutual companies a similar situation prevails; only forty-five per cent of estimated medical costs are paid by these non-group contracts. Such contracts, although providing a greater degree of protection, are still inadequate.¹

¹ Because of the limited data available on co-operatives and fraternal organizations it would be unrealistic to draw conclusions concerning adequacy of protection on the basis of the percentage of total physicians' services paid for by these organizations under group and non-group contracts.

Cost of Insurance

The purpose of insurance or prepayment is to remove from the individual the risk of having to meet part or all of his own health expenditures. This can only be done at some cost—the cost of collecting and administering premiums and paying claims. The cost of insurance then becomes the difference between premiums paid in and claims paid out.

In the case of the prepayment plans, the difference between premiums and claims represents acquisition costs, administration costs and reserves. With the commercial insurance companies, it represents acquisition costs, administration costs, reserves, taxes and profits. Usually, this ratio of claims paid out to premiums received is referred to as the “loss ratio”. However, because the consumer is primarily concerned with health services, the critical ratio is that of acquisition, administration and other costs to actual expenditures on services. How much, for example, must be added to the basic cost of medical services for the advantages of insurance or prepayment? This figure we now call the “retention figure”, and the proportion the “retention ratio”. The 1961 data for Canada are shown in Table 18-3.

These data and comparisons are highly enlightening. They show that, in 1961, the insurance and prepayment systems paid on behalf of 9.6 million Canadians, medical bills, and in some cases some related other bills, totalling \$175,122,600, an average of \$18.20 per person. For this purpose and for the advantages of insurance, these 9.6 million Canadians paid in premiums \$224,093,200 or an average of \$23.28 per person.¹ The retention figure—i.e., the costs of administration, acquisition of new groups or individuals, commissions, taxes and profits,—totalled \$49 million, or an extra 28 per cent added to the amount of the payments for medical services.

The retention figure is highest among the commercial companies, reaching 38 per cent for group contracts, but rising to 151 per cent for non-group contracts sold to individual purchasers. This latter figure means that for each dollar of protection, the individual would have paid \$2.51 in premiums. By contrast, the prepayment plans actually paid a higher proportion of premiums for medical services on behalf of non-group subscribers than of group subscribers, with retention figures of 11 per cent and 18 per cent, respectively. The retention figures for commercial carriers covering group and non-group contracts was 44.3 per cent and the corresponding figure for prepayment plans was 17.6 per cent.

¹ See Table 18-3.

TABLE 18-3 TOTAL AND PER CAPITA PREMIUMS, CLAIMS AND RETENTION FIGURE, AND RETENTION FIGURE AS PERCENTAGE OF CLAIMS BY TYPE OF ORGANIZATION AND CLASS OF CONTRACT ISSUED, CANADA, 1961

Type of Carrier	Total Premiums	Premium Per Capita	Total Claims	Claim Per Capita	Retention Figure	Retention Per Capita	Retention Ratio
	\$'000	\$	\$'000	\$	\$'000	\$	%
<i>Group Contracts</i>							
Stock Companies.....	41,590.0	22.42	30,679.5	16.54	10,910.5	5.88	35.6
Mutual Companies.....	43,407.4	19.08	31,387.0	13.79	12,020.4	5.28	38.3
Co-operatives and Fraternal Organizations.....	251.8	4.53	205.4	3.70	46.4	.83	22.6
Prepayment Plans.....	109,174.4	26.71	92,118.5	22.54	17,055.9	4.17	18.5
<i>Non-group Contracts</i>							
Stock Companies.....	6,667.9	23.00	2,648.8	9.14	4,019.1	13.87	151.7
Mutual Companies.....	6,127.8	28.36	3,035.8	14.05	3,092.0	14.31	101.8
Co-operatives and Fraternal Organizations.....	709.9	8.57	542.4	6.55	167.5	2.02	30.9
Prepayment Plans.....	16,164.0	21.22	14,505.2	19.04	1,658.8	2.18	11.4
<i>All Contracts</i>							
Group.....	194,423.6	23.50	154,390.4	18.66	40,033.2	4.84	25.9
Non-group.....	29,669.6	21.97	20,732.2	15.35	8,937.4	6.62	43.1
TOTAL.....	224,093.2	23.28	175,122.6	18.20	48,970.6	5.08	28.0

SOURCE: Based on Table 18-1, and Berry C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Table 4-1 minus accident and sickness premiums and claims, but including hospitalization insurance, with adjustments noted in his Chapter 4, with reductions for (a) premiums returned, (b) dividends credited to policy owners and (c) increases in unearned reserves and advance premium accounts, estimated at 7.3%, 4.5%, 6.1% and 0.6% for stock companies, mutual companies, co-operatives and fraternal organizations, and pre-payment plans respectively.

PROBLEMS INVOLVED IN SUBSIDIES

In Chapter 4, we indicated that there was a substantial number of Canadians who, by any measure, had low incomes; incomes that were too low to enable them to purchase the health insurance they needed. There is little, if any, disagreement with these findings and all groups agree that public funds will be required if the proportion of the population who cannot independently afford it, are to receive the protection they require.

What is at issue is the type of subsidy and here the numbers of persons requiring a subsidy becomes an important factor.

The number requiring subsidy depends on two variables: (1) the total cost of the item or items of health services being insured, and (2) distribution of incomes of various levels. In the submissions of the insurance industry, Trans-Canada Medical Plans, and the Canadian Medical Association, only the premiums for physicians' services (medical, surgical and obstetrical) are considered.¹ The second variable is a subjective one, requiring a judgment as to the income level below which subsidy is considered to be necessary. In the submission of spokesmen of the insurance industry, the cut-off point or "threshold" is suggested to be where the income tax exemptions provisions place it now, i.e., at \$1,000 for single persons and \$2,000 for family heads, rising by \$300 for each dependant receiving family allowances and \$550 for other dependants. Using these criteria, the Department of Medical Economics of the Canadian Medical Association estimates that 2,950,000 persons would require partial assistance for medical services alone.² Part of the case for selecting the income tax exemption level as the threshold point rests on a sample survey of insurance coverage in British Columbia and Alberta sponsored by the respective provincial divisions of the Canadian Medical Association. These revealed that approximately one-half of non-income tax payers were insured either through their medical welfare programme (25%) or through private insurance (25%).

Ignoring the problem of whether the experience of British Columbia and Alberta is typical of the experience of a province like Newfoundland or the Maritime Provinces, these surveys emphasize the point at issue; that is, what health services should a subsidy be related to? In calculating the numbers requiring subsidy the above approach concentrated only on the ability to finance a medical care premium. It should be noted that in both these provinces there are no premiums for the hospital services programme,

¹ The Canadian Medical Association brief does suggest an additional \$10 annual subsidy for prepaying drug costs for those in receipt of public assistance, *op. cit.*, p. 84.

² The Canadian Medical Association, Department of Medical Economics, *op. cit.*, p. 22.

although there are direct payments at the time of service. Could one-quarter of the non-tax-paying group have afforded the Alberta Medical Plan premiums of \$63 (single) or \$159 (family) if there had been a \$25.20 (single) or \$50.40 (family) hospital insurance premium as, say in Ontario?¹ Could they have done so and still purchased other health items such as drugs, glasses, hearing aids etc.?

An alternative approach to the problem of estimating the number of Canadians requiring subsidy clearly is required. Accordingly, we have calculated the costs of the total premium required to pay for the full range of health services in 1961 on a prepayment basis and compared this with some estimates of Canadian income.

The estimate of the total premium for medical care and surgical care, hospital care, as well as for dental care, drugs, optical services and nursing care is presented in Table 18-4 with the method of calculation indicated in the footnotes.

TABLE 18-4 ACTUAL AND ESTIMATED COSTS OF PREMIUMS FOR HEALTH SERVICES, 1963

	Single	Family
Hospital Services*.....	\$ 25.20	\$ 50.40
Medical Services**.....	63.40	159.00
Dental†.....	12.50	46.25
Drugs††.....	18.00	66.60
Others ^a	6.30	23.35
TOTAL	125.40	345.60

* The Ontario Hospital Services premiums in 1963, which were raised in 1964 to \$39 and \$78.

** The premium approved in 1963 for the Alberta Medical Plan. The figure for single coverage of \$63.40 compares with an estimate of between \$22.39 and \$23.06 in 1961 referred to in the Interim Report of the Advisory Planning Committee on Medical Care to the Government of Saskatchewan, Regina, September 1961, p. 75. The actual costs of the medicare programme in Saskatchewan per capita, during its first full year of operation in 1963 was \$22.05. For an even higher suggested premium than for the Alberta Medical Plan, see the suggested premium structure proposed by the Canadian Health Insurance Association in its Brief to the Medical Services Enquiry of Ontario, January 29, 1964, p. viii.

† The per capita cost of dental services with a ratio of one dentist to 2,000 people.

†† The current premium experience of Prescription Services Incorporated of Windsor Ontario.

^a Actual expenditures are taken from the National Accounts. Non-prescribed drugs are not included.

¹ See footnotes to Table 18-4.

The total family premium in 1963 for the full range of health services is therefore estimated to be approximately \$346 per year,¹ and for the single income earner, \$125 per year.

We have examined the use of income tax exemptions as the dividing line between those who need assistance in financing health services and those who do not, and we find that this is an unsatisfactory method because it omits more persons than it covers. We have concluded that we should base our judgment on actual recent experience, on the proportion of income that an individual or family head can reasonably be expected to allocate continuously to health services.

According to a recent family expenditure survey,² the percentage of income typically allocated to health services averages for each income level was approximately four per cent. We believe that, with all services financed on a regular premium basis, this percentage could be increased, but not, we believe, to more than seven per cent, which would be a higher percentage than is paid in any other western nation. For this calculation, therefore, we have used three alternative rates: five per cent, six per cent and seven per cent.

On the first assumption that no one should pay more than 5 per cent, a single person earning \$2,500 or more and a family head earning \$6,900 or more would be able to meet his premium (\$125 or \$345) in full. All those earning below these respective amounts would be entitled to some amount of subsidy.

On the second assumption (6 per cent) a single person earning \$2,090 a year or more and a family head earning \$5,760 or more would need no assistance, but all those earning less would be entitled to subsidy.

On the third assumption (7 per cent) the respective amounts would be \$1,790 and \$4,930, and those earning less than these amounts would be entitled to subsidy. Not all of these would request assistance, but all would be entitled.

In endeavouring to arrive at an estimate of the number of family heads and individuals requiring subsidy who fall into these categories we are handicapped somewhat by lack of complete data on incomes. The data we do have, have already been described in Chapter 4 and include the following:

- (1) A Dominion Bureau of Statistics 1961 Summary of Family Incomes Statistics covering Urban and Rural Non-Farm residents. This sum-

¹ It would be less in those provinces financing hospital services solely from general revenue and somewhat less on the average in those provinces financing by retail sales tax.

² Dominion Bureau of Statistics, *Urban Family Expenditure, 1959*, Ottawa: Queen's Printer, 1963, pp. 20 ff.

mary is based on the 1961 Census but, because it excludes farm population, covers only about 80 per cent of the total population.

- (2) A 1958 Farm Income and Expenditure Survey which, though outdated, does give us some indication of the proportion of farm population requiring subsidy.

In addition we have a Department of Labour survey of employers who in 1961 paid part or all of the medical insurance premiums of their employees. This survey indicates the number of employers who pay the medical insurance premiums in full, it does not indicate the amounts of premiums nor the proportions of the varying premiums paid by employers who pay less than the total premium. Finally we have an estimate of the number of families or persons receiving medical care through public assistance programmes.

The data relating to the *non-farm* population are presented in Table 18-5. With no subsidy of any kind, either in the form of employer payment of premiums or public assistance programmes, the number of individuals and heads of families requiring a subsidy of some kind in 1961 would range from 75 to 54 per cent depending on whether the maximum percentage of income allocated to health care is 5 or 7 per cent. These figures are substantial but it is necessary to adjust for the subsidies already provided in order to estimate the additional group requiring assistance.

First, it is necessary to eliminate recipients of public assistance, whom, we assume, will be means-tested and entitled to health services at public expense. We do not know the distribution of these as between urban and rural, and therefore have assumed that 90 per cent fall in the urban and rural non-farm category (as against 80 per cent of income earners). Eliminating these persons would reduce totals by 720,000. This total should be reduced further because only a proportion of the recipients of public assistance are heads of families or individuals. Since we do not have these data, in order to present a conservative estimate, we have reduced the total of 720,000 by only 20,000, leaving the total reduction from the urban and non-farm rural income earners of 700,000 recipients of public assistance.

Second, because we have no way of ascertaining either the income distribution of the 1,600,000 income earners who receive an employer contribution or the distribution of the amounts of the subsidies within each income group, we could take two extremes by assuming either that all 1,600,000 would receive from their employers, contributions high enough to make the government subsidy unnecessary, or alternatively, that despite an employer contribution all would require government subsidy. Since neither of these propositions is true, the actual number must lie somewhere in between, and we have assumed that a reasonable proportion would

be 50 per cent. We have calculated the totals requiring subsidy for each of the three categories (5, 6 and 7 per cent) on the assumption that one half of the 1,600,000 would still require governmental subsidy.

The results of these adjustments also are indicated in Table 18-5. If we assume that the maximum contribution for premium should be 5 per cent of income, the proportion of urban and rural non-farm individuals and family heads entitled to subsidy, and requiring some form of income assessment would be 64 per cent. If we assume that the maximum should be 6 per cent of income on a continuing basis, the total entitled to subsidy on the basis of an assessment of income would be 48 per cent on income earners. If the maximum is set at 7 per cent, the total entitled to subsidy would be 34 per cent.

With respect to farm families and individuals, it is evident from the data relating to this group presented in Chapter 4, that in 1957 Canadians living on farms were unlikely to have incomes on the average higher than Canadians living in cities. It is true that since 1957 there has been an improvement in average farm incomes but it is unlikely that they had risen so rapidly that by 1961 they had surpassed average urban incomes. We would assume then that in 1961 the percentage of farm income earners falling below the relevant "thresholds" or subsidy cut-off points was the same for farm families and individuals as it was for urban and rural non-farm families and individuals. In fact, it is likely that the proportion was higher. The result, however, is that, depending on the percentage rate (5, 6 or 7 per cent), in addition to those already income-tested for various welfare programmes, between 39 per cent and 66 per cent of income earners would have needed means-testing.

Applying the appropriate percentages to the total population (farm and non-farm) in 1961, as shown in Table 18-5, we find that somewhere between 3.4 million and 4.7 million families and unattached individuals, involving between 9.9 million and 14.1 million persons, would have had to be subsidized and means-tested in 1961. If we deduct those now being assisted and means-tested (including the "employer assisted" group) the corresponding numbers would have been in 1961 somewhere between 1.9 million and 3.2 million families and unattached individuals, involving between 5.5 million and 9.6 million persons. A comparable range for 1971 would be between 8.9 million and 14.9 million persons requiring means-testing. Whatever the exact number may be, it would be many millions. This would pose a formidable task in terms of organizing administrative machinery, extra costs which Canadians cannot afford, and a method of examining the individual which, in the opinion of many Canadians, is contrary to the dignity of man.

Although individual and family incomes are bound to rise in the future, increased expenditures for medical services are likely to rise at least as rapidly so that percentages may not change significantly.

TABLE 18-5 ESTIMATED NUMBER REQUIRING SUBSIDY, FARM AND NON-FARM AREA, CANADA, 1961 AND 1971

(in thousands)

Category	Total	Number Requiring Subsidy		
		Maximum of 5 Per Cent	Maximum of 6 Per Cent	Maximum of 7 Per Cent
Number of Unattached Individuals and Families				
Rural Non-Farm and Urban Area				
Unattached Individuals.....	1,407	923	827	756
Families (2 or more persons).....	3,657	2,861	2,385	1,966
Total: Families and Unattached Individuals..	5,064	3,784	3,212	2,722
Per Cent Requiring Subsidy.....	—	74.7	63.4	53.8
Farm Area*				
Unattached Individuals.....	763	500	449	410
Families (2 or more persons).....	490	383	319	264
Total: Families and Unattached Individuals..	1,253	883	768	674
Per Cent Requiring Subsidy.....	—	70.5	61.3	53.8
Total (Farm and Non-Farm)				
Unattached Individuals.....	2,170	1,424	1,276	1,166
Families (2 or more persons).....	4,147	3,244	2,704	2,230
Total: Families and Unattached Individuals..	6,317	4,668	3,980	3,396
Per Cent Requiring Subsidy.....	—	73.8	63.0	53.8
Less Persons Receiving Assistance (Farm and Non-Farm)				
Publicly Assisted.....	700	700	700	700
Employer Assisted.....	800	800	800	800
TOTAL.....	1,500	1,500	1,500	1,500
Net Unattached Individuals Requiring Subsidy.....	1,657	966	796	650
Net Families Requiring Subsidy.....	3,160	2,202	1,684	1,246
Net Families and Unattached Individuals Requiring Subsidy.....	4,817	3,168	2,480	1,896
Per Cent Requiring Subsidy**.....	—	65.8	51.5	39.4
Number of Persons*				
Gross Total Requiring Subsidy				
Unattached Individuals.....		1,424	1,276	1,166
Individuals in Families.....		12,652	10,546	8,697
TOTAL—1961.....		14,076	11,822	9,863
Net Total Requiring Subsidy				
Unattached Individuals.....		966	796	650
Individuals in Families.....		8,588	6,568	4,859
TOTAL—1961.....		9,554	7,364	5,509
Net Total Requiring Subsidy				
TOTAL***—1971.....		14,864	11,634	8,900

* We have assumed that income and family distribution for the non-farm population also applies to the farm population; that the family distribution is the same also for the assisted groups and that the family size for all groups shown is 3.9 as is the case for the population as a whole.

** The corresponding percentages for non-farm are as follows: 5 per cent—64 percent; 6 per cent—48 per cent; and 7 per cent—34 percent.

*** The estimate for 1971 was obtained by applying the percentages indicated to the projected population of Canada, 22,589,500.

SOURCE: Estimates based on Dominion Bureau of Statistics, *Census of Canada, 1961*, Vol. 2, Part 1, and *Summary Family Income Statistics, 1961*, Ottawa: Queen's Printer, 1963.

ISSUE OF COMPULSION

This is an important issue, since it lies at the roots of our democratic system. The essential point to be made is that society, in its collective judgment, has found it necessary to use the force of law to achieve a number of socially desirable objectives: attendance at school, payment of taxes to support schools, licensing of physicians to prevent unqualified persons from practising, regulation of insurance companies, to mention only a few. There can be few who would oppose the element of compulsion present in any of these examples.

The most relevant example is, of course, compulsory education. But it should be noted that there is a great and fundamental difference between a government-sponsored health service and compulsory education. Compulsory education requires compulsory financing (through taxes) and compulsory attendance at school. In contrast, a health programme requires only payment of taxes; there is no compulsion on anyone to accept or obtain services. Moreover, as long as the providers of service remain as independent self-governing professional practitioners with whom the insuring agency, on which the professions are represented, makes a contract; they are not employees of the state. As a matter of fact, in a situation such as that obtaining in those provinces financing their hospital insurance programme from indirect revenues, it is almost impossible to discover any element of compulsion with the hospital services in any form whatever. In fact, the greatest result has been an extension of freedom—freer access to facilities, and freedom from fear of financial consequences.

SUMMARY AND CONCLUSIONS

We have examined the major points of view and the evidence relating to them. We can now summarize the conflicting points of view from which we can then proceed to present our conclusions.

First, those who believe governmental action either unnecessary or limited solely to subsidizing individuals to enable them to pay their premiums, base their case on the following grounds:

- (a) In our society (they say) government action should be considered as a last resort. Government's role should be:
 - (1) to meet the full needs of those who have no resources of their own (the recipients of public assistance) and,
 - (2) to meet the residual needs of those who can pay part of the cost of the premiums charged by commercial insurance and voluntary prepayment plans.

- (b) If government action is limited to assisting those in these two groups, the additional financial burden to be borne by governments will be substantially reduced.
- (c) The voluntary prepayment plans and commercial insurance companies have made rapid progress and, given time, will be able to meet the needs of the vast majority of Canadians.
- (d) In our democratic society compulsion should be avoided.

Those arguing in favour of a government-sponsored comprehensive health services approach do so on the following grounds:

- (a) There is a fundamental difference between a health service oriented to the prevention and treatment of illness and a voluntary or commercial insurance plan organized to meet sickness and accident costs. In its own interest, a society must strive for the greater objective.
- (b) All Canadians must have available to them an effective health service. The methods of financing must be such as to bring the direct costs within their capacity to pay.
- (c) The voluntary method has been effective primarily for organized groups, particularly for employees in stable employment and for whom the employer makes a substantial contribution toward the premium, but which because of inherent limitation, does not meet the needs of a large proportion of the population that does not fall in these categories.
- (d) The number of persons covered by the prepayment plans and the insurance companies is still substantially below the total population while in many instances the benefits provided are inadequate. Moreover, the most difficult part of the task—the insuring of the aged, the chronically ill, the self-employed, the farmers, those in small establishments, and others not in employee groups—lies ahead.
- (e) The proposal that the government should only assist those who are ascertained by some form of means test to be in need of assistance to pay voluntary plan or commercial insurance premiums, does not realistically assess:
 - (1) the proportion of the population that would require such means-testing,
 - (2) the magnitude of the sums required for supplemental assistance,
 - (3) the difficulty of establishing equitable criteria for assessment of need,
 - (4) the fluctuation in incomes (for example, among seasonal workers) and the consequent continuing need for re-testing,

- (5) the high acquisition and administrative costs of voluntary insurance.
- (f) The National Hospital Insurance Programme has proved that a universal comprehensive programme is feasible, practicable, economical to administer and immediately effective for the total population.
- (g) The device of tax payments to achieve universal coverage is acceptable to a great majority of Canadians.

The Commission recognizes and has given careful thought to both the philosophical arguments and the practical consideration in the two positions. In endeavouring to sort through the many arguments pro and con, the Commission has been mindful that voluntary action is the main-spring of a democratic society, and that community action by the people through their government should be undertaken only when voluntary action leads to lesser objectives or fails to reach essential objectives for sufficient numbers.

The Commissioners were basically sympathetic to the views of those who believe full-scale government action to be unnecessary in the health services field. Like most Canadians, we suspect, we are opposed to change simply for the sake of change.

Accordingly, we examined hopefully the central feature in the Health Insurance Association and Canadian Medical Association proposals, that the great majority of Canadians could and would become insured through their own means and that the government would need to assist only a relatively small number. The Health Insurance Association, for example, states that the borderline for determining who will need subsidy should be drawn where the income tax legislation draws it now. That is, anyone now paying income tax is deemed able to pay his full premiums and only those who do not pay income tax fall in the "medically indigent" category and therefore require subsidy.¹

Unfortunately, the problem is not that simple. And the main reason is, as we have said, that the Canadian people are concerned not with paying for physicians' services alone but with meeting the costs of the full range of services necessary for comprehensive health care. That is, in ascertaining ability to pay without subsidy, we must consider not only the premium for medical and surgical care (as proposed in the two submissions mentioned above) but also for hospital care insurance already being paid (for example, \$78.00 per family per year in Ontario) and, as well, for dental care, drugs, optical services, and nursing. After more than 35 years of endeavour on the

¹ Canadian Health Insurance Association, *op. cit.*, p. 5.

part of the voluntary plans and commercial insurance companies, only slightly more than one-half the population of Canada has any degree of voluntary insurance protection and this for medical services alone. Of these, the coverage held by nearly 3 million is wholly inadequate. Over 7.5 million Canadians had no medical care insurance whatever.¹ Furthermore, a comprehensive health care programme involves more than the provision of health services. If these benefits are to be provided in an efficient manner they require systematic planning for the supply of a sufficient number of health personnel, the educational facilities required, and the effective organization of co-ordinated services.

Having decided that the best solution for Canada is the establishment of a comprehensive, universal Health Services Programme as outlined in the Charter, and having considered the three points at issue involved in determining the best method of implementing such a programme, we have concluded that Canada requires the establishment of health insurance funds, provincially administered, contributed to by the Federal Government from general revenue, and by provincial governments as they may determine, structured along lines similar to the Hospital Insurance Programme.

Our reasoning is as follows:

1. That the method of subsidy should be one that subsidizes the insurance fund rather than one that subsidizes individuals.
2. That reliance on the method of voluntary insurance would be unnecessarily slow and inevitably incomplete.
3. That the number of individuals who would require subsidy to meet total health services costs is so large that no government could impose the means test procedure on so many citizens or would be justified in establishing a system requiring so much unnecessary administration. The health services will make enough demand on our resources. We must not waste them.
4. That, so far as the issue of compulsion is concerned, we believe that as long as decisions of this kind are made by democratically elected legislatures, as long as they provide only basic essentials (for example, standard ward hospital care) and assure citizens free choice of physician and hospital and free choice of additional items against which they may insure through private arrangements, then we have confidence that our democratic ideals will not only be protected, but, in fact, more fully realized. It is of great significance for a democratic society such as ours that the Hospital Insurance and Diagnostic

¹ See page 727.

Services Act was passed by an unanimous vote of the House of Commons representing all political parties.¹

5. That the health insurance fund in each province should be administered by one agency in order to achieve full integration and effective planning of *all* health services, and thus to obtain the most efficient administration of all sectors of the proposed Health Services Programme. We have recommended that the existing hospital insurance programme be administered by the same agency in each province as administers all personal health services.² This necessarily means rejection of any proposal that one phase of health services, namely payment of physicians' services, be administered by a separate agency.

To return, in conclusion, to the claim made by the health insurance industry that given time the great majority of Canadians would become insured through their own means, we feel that this is not a realistic proposal.

In this respect we can learn a lesson from our sister Dominion, Australia. After 11 years of operation in Australia, a voluntary programme of physicians' services with government subsidies, it has been possible to cover only about 80 per cent of the population and this includes public welfare recipients. Australia, while choosing to build its medical benefits scheme on a voluntary basis with government subsidies, rejected the use of commercial insurance carriers. Sir Earle Page, a former Prime Minister of Australia and the architect of the Australian Medical Benefits Programme, was firm in his conviction that only voluntary non-profit organizations should be used. These bodies have operated on an administrative ratio of 13 per cent including a 5 per cent commission paid to vendors of contribution stamps, which is the method by which the self-employed and those not subject to payroll deductions contribute to their chosen carriers. Begun in 1953, this voluntary system in Australia has provided coverage on a reimbursement basis of up to 90 per cent of medical bills to approximately 80 per cent of the population. It appears very difficult to cover the remaining 20 per cent; the 80 per cent includes the pensioners and those on public assistance programmes.³

Now, if we accept the premise that the health insurance industry in Canada could achieve universal coverage of medical services—and this is in our opinion an heroic assumption—such a programme would cost, according

¹ Canada, House of Commons, *Debates* 1957 Session, Vol. III, Ottawa: Queen's Printer, 1957, p. 3393-94.

² See Chapter 2, Recommendation 1, (7).

³ *The Australian National Health Service*, a descriptive document prepared for the Advisory Planning Committee on Medical Care to the Government of Saskatchewan, The Secretariat, Regina, 1961, pp. 4 and 8. "Report on Medical Services Insurance in Australia", Association Notes, *The Canadian Medical Association Journal*, 84: 965-971, April 29, 1961.

to our estimates,¹ \$797 million in 1971 (in current dollar terms). To this must be added the cost of administering such a programme by government agencies, estimated on the basis of the hospital insurance experience at 5 per cent,² equivalent to \$40 million for a total of \$837 million. If the 28 per cent retention ratio³ were to apply in 1971 as it did in 1961,⁴ the total cost of the medical services would amount to \$1,020 million in 1971.

Hence, the decision which Canadians have to make, assuming that they accept the claim of the health insurance industry that it can provide universal coverage, is whether they wish to pay \$1,020 million for physicians' services in 1971 for a programme administered by the insurance industry, or \$837 million for a programme administered by government agencies.⁵

In our opinion it would be an uneconomic use of Canada's limited resources to spend an extra \$183 million, or a substantial part of this sum, just to have physicians' services alone administered by the health insurance industry. Physicians' services, as we have emphasized, are but one phase of a comprehensive programme. Canada faces substantial demands for funds for the expanding Health Services Programme, as we elaborate in Chapter 20. Hence, we must choose the most frugal method to achieve our objectives—one which we know from our hospital insurance experience is equally efficient.

Accordingly we have been impelled to conclude that government action is imperative and that we should move immediately to mobilize the nation's resources to establish efficient, universal, comprehensive health services programmes in all ten provinces and the territories.

¹ See Chapter 20.

² See Chapter 20. The ratio was 5.7 per cent in Saskatchewan on the basis of the first year's experience in operating its medical services programme provided by data (Saskatchewan Medical Care Commission).

³ This ratio covers acquisition costs, taxes, administration, reserves and profits. (See Berry, C. H., *op. cit.*, Chapter 4, and Table 18-3.)

⁴ We have used the 28 per cent ratio which is the retention ratio applicable to all carriers including stock companies, mutual companies, co-operatives and fraternal societies, and prepayment plans. The ratio would have been higher if we had used the proportion applicable to commercial insurance carriers only (see Table 18-3).

⁵ These figures are in constant (1957) dollars. The amounts would be higher in current dollar terms.

PART V

FUTURE HEALTH COSTS AND
THE CANADIAN ECONOMY

Projected Output and Government Spending In Canada, 1961-1991

An assessment of the feasibility and methods of financing a health care programme in Canada requires an examination of the productive capabilities of the economy and the alternative ways open to the nation to make use of the volume of goods and services produced in the future. Hence we present in this chapter, in summary fashion, projections of Gross National Product and government expenditures. The increase in health expenditures that may take place in Canada over the next three decades, and the role of health expenditures in our expanding economy are discussed in Chapter 20. The increases projected as a consequence of the expansion of public health programmes will depend to some extent on the growth of national output over the next generation and the share of this output that may be allocated to the public sector. We therefore turn to a consideration of the likely range of national output between 1961 and 1991 and the proportion of this output that might be allocated to government spending.

MEANING OF ECONOMIC PROJECTIONS

An economic projection is not a forecast in the sense that we expect what is projected to actually happen. It is rather an extrapolation of the systematic long-term *trends* which have been observed in the economy in the past. But the structure of an economy is such that it produces more than long-term trends. It also produces *cycles* about the trends, and in addition is subject to many *random* influences which cause it to fluctuate irregularly. Most of the random influences are small, and arise from a myriad of irregular acts of non-systematic behaviour or disturbances in the economic system, which are added to the systematic behaviour of individuals, and of the aggregate system. Some, however, are large influences arising from some major international event, natural phenomenon, scientific discovery, or social

upheaval. These are classed as *episodes*. Their effects show up distinctly as large irregularities in economic time series.

An extrapolation of long-term trends does not allow for the inevitable cycles, random disturbances and major episodes which take place from time to time. Since many of these occurrences cannot be foreseen it would be difficult to allow for them. It may be possible to anticipate a cyclical pattern for a little while into the future, but even the extent and duration of such cycles are subject to whatever government policies are pursued to minimize their impact. Thus about the only kind of economic movement that one can hope to project for any considerable period into the future is the long-term trends, of the economy either along a straight line or along growth rate paths which vary over sub-periods. The result will be broad movements, not at all like the economic series of everyday life which have the cycles and the irregularities superimposed upon them.

But even the trends which we project may vary from the actual behaviour pattern of the economy, for these trends are affected by underlying behaviouristic forces and technological relationships of the economy; and these are likely to evolve in such a way as to alter the long-term trends of the economy.

There are other important factors that may affect Canada's growth prospects over the longer term such as our competitive position in world trade and the change in the level of demand abroad for Canada's major export products, as well as our terms of trade. Then there are the problems of adjustment which Canada faces as the structure of its economy changes.¹

Another difficult choice that has to be made in preparing a longer term economic projection is the formulation of an assumption of the downward trend of the average number of hours worked by Canadians per week and per year. Such an assumption is usually based on past experience and trends. But, many forces, sociological as well as economic may alter our future choices between work and leisure. We have assumed that Canadians will move gradually and slowly in the direction of increased leisure.

A similar uncertainty is inherent in any assumption made with respect to the future course of technical progress. Who can foresee the great discoveries in science, the ingenious inventions, the changes in human spirit and morale which are yet to come? And, those that do come will set in train new trends in our technical progress and hence bring us increases of real output per man-hour and in real per capita income.² To allow for variation in the impact of some of these factors we have presented a range of estimates.

¹ Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapters 4, 5 and 7.

² *Ibid.*, Chapter 7.

Since the making of meaningful economic projections is beset by so many difficulties and uncertainties, it may be wondered what value there is in undertaking such an exercise. The usefulness lies in the fact that our economic projection, carefully prepared, may be reasonably accurate for the early part of the period projected, and hence can serve as a basis for action in guiding the economy toward social and economic goals for the short- and medium-term.

Every individual in his daily round of life must make decisions and act on the basis of the best assessment he can make of the future. This is necessary for his survival and progress. A whole society must do the same. There is little doubt as to the merits for society to use forecasts and projections. In fact, it uses them, consciously or unconsciously, every day of its existence, as a basis for its myriad of minor and major decisions. The real question is: *how explicitly and carefully* the forecasts and projections are to be made.

On the basis of this reasoning a carefully prepared projection can help society to make more effective decisions, on the average, for setting its immediate course toward its long-term goals. But then since there is a likelihood that trends may change, the projection must be kept under continuous review and revision, so that plans and decisions for the future can be revised at intervals.

Such a process of intelligent decision-making based on using forecasts, projections and a measure of economic planning can be likened to the navigation of a ship or aircraft to a distant destination. The goal is known in advance, and a course is calculated and set for it, based on conditions in the atmosphere and in the craft as best they can be ascertained at the time. But these conditions are under continuous review as the journey proceeds. Then as changes in this environment, or in the craft's structural characteristics are detected, the course is altered accordingly. This process is successively repeated until the destination is reached. A systematic procedure like this, based on calculations using the best data and theory, is far more likely to achieve success than the sole use of intuition and trial and error—in economic navigation, as in marine and air navigation.

MAKING OF ECONOMIC PROJECTIONS

The technical details which lie behind our estimates are to be found in a study we commissioned, dealing with economic and population projec-

tions for Canada, for the period 1961-1991.¹ Here we would like to give a brief outline of the factors that have determined our estimates of future Gross National Product. We commence with an independent projection of Canada's population from 1961 to 1991 which we have described in Chapter 4. This projection is based on trends of fertility, mortality and net immigration, and yields estimates of the male and female population, non-institutional, civilian and aged 14 and over. From these population groups we present estimates of the number that will wish to work. Using projected male and female labour force participation rates we arrive at Canada's labour force for the period 1961 to 1991 at quinquennial intervals. We then make certain assumptions about rates of unemployment and we project hours of work per year per employed person. As a result we arrive at projected total man-hours of labour for the country as a whole. The output of this growing supply of man-hours of labour will depend on how productive the Canadian labour force will be, on its skills, education, attitude, health and on the technology embodied in the capital stock with which labour can work, in short on what we have earlier referred to as the socio-technical determinants of economic growth. The average productivity of labour in the past has then been projected into the future so that with the projected labour supply and labour productivity an estimate can then be derived of potential national output. This potential is, of course, determined by the growth of demand and the provision of the appropriate amount of capital per worker. Since we have already assumed a certain level of unemployment and average labour productivity, we have in fact, projected a particular trend of demand; that which is associated with the particular level of unemployment projected. Once we have projected final output we can then, again on the basis of past trends, project the distribution of final output including the share of GNP allocated to expanding the stock of capital, and the share of GNP allocated to the health services sector.

LABOUR FORCE

Population growth is the source of the labour supply in the productive system and we have presented our estimates of population growth in Chapter 4.² The size of the labour force depends on the degree of participation in the productive process and this in turn is influenced by long-term trends of sociological and technological forces, as well as by the economic

¹ Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, see particularly Chapters 7, 8 and 10, and Appendix E.

² See Footnote 3, p. 117.

influences of real wage rates, types and extent of unemployment, standards of living and wealth. Certain broad trends in the historical participation rates stand out and it is upon these trends that we have based our future projection of the labour force.

The general participation rate of the total labour force (including the military) to total population climbed steadily from 37.9 per cent in 1926 to 42.3 per cent in 1945. Since then it has declined somewhat to 36.5 per cent in 1961. The bulk of these changes can probably be attributed to a decline in the proportion of the dependent population composed of the young and the aged in the earlier period followed by a reversal of this trend in the period after 1945. Looking at the over-all participation rate of the civilian labour force, compared with the civilian non-institutional population age 14 and over, we find that since the war there has been a steady decline in the participation rate for men from 85.2 to 80.0 per cent of the male labour force while for women the participation rate has been increasing steadily since 1950 reaching 28.8 per cent in 1961.¹

The decline in male membership largely has been the result of a notable decline in the participation of the 14-19 age group and of the age group 65 and over. Both of these are the consequence of an increasingly affluent society which makes possible extended education to meet the requirements of a more complex society, and permits early retirement through the growth of pension plans. The increasing participation of women can be related to a change in social attitudes about women working, the result mainly of two world wars. It is also related to the reduction by modern machinery of some of the heavy work of production, coupled with the increased need for office and administrative functions in our more complex productive system. At the same time home-making is lightened by equipment of an increasingly automatic nature. The need for more education causes the participation rates of the age group, 14-19, to decline. In all other groups the rates are increasing. The increase is modest in the ages 20-24, high in the 25-34, almost explosive in the groups 35-64, and modest in the 65 and over group.

Both the trend to increased participation of women in the labour force and a decreased participation rate for men can be expected to continue for some time into the future at the rate which has been characteristic of recent years. The growing demand for longer schooling and more professional training will keep more people out of the labour force at least until age 20 as will the provision of more schools, technical colleges and universities. The continued growth of incomes and pensions will also permit a larger number of the population to retire at least at age 65. The return of married women to the labour force can be expected to continue and the

¹ See Table 19-1.

TABLE 19-1 CANADIAN ECONOMIC GROWTH, 1926-1991

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Year	Total Popula- tion	Civilian Non-Insti- Population Age 14 and Over		Participation Rates of Civil. Non-Insti- Population Age 14 and Over		The Labour Force Civilian				Rate of Unempl. Rel. to Civil. Lab. Force	Unem- ployment Civilian	Total Employ- ment Civilian	Average Hours of Work	
		Men	Women	Men	Women	Men	Women	Total						
		Symbol	N	N _{14m}	N _{14f}	pr _m	pr _f	N _{14m}	N _{14f}	N _i	N _u	N _e	Per Year	Per Week
Units	June 1 t	June 1 t	June 1 t	ann. av. %	ann. av. %	ann. av. t	ann. av. t	ann. av. t	ann. av. %	ann. av. t	1 hour	h	h _w	
1926.....	9,451	—	—	—	—	—	—	—	—	—	2,867	2,867	54.98	
1931.....	10,376	—	—	—	—	—	—	—	—	—	2,653	2,653	50.88	
1936.....	10,950	—	—	—	—	—	—	—	—	—	2,641	2,641	50.51	
1941.....	11,507	—	—	—	—	—	—	—	—	—	2,734	2,734	52.43	
1946.....	12,292	4,399	4,379	85.2	24.7	3,746	1,082	4,828	3.4	166	4,671	2,447	46.93	
1951.....	14,009	4,857	4,874	83.9	23.5	4,076	1,147	5,223	2.7	143	5,089	2,289	43.90	
1956.....	16,081	5,397	5,408	82.2	24.9	4,436	1,346	5,782	3.4	197	5,596	2,249	43.01	
1961.....	18,238	5,980	6,030	80.0	28.8	4,782	1,736	6,518	7.2	469	6,060	2,164	41.50	
1966.....	20,296	6,702	6,832	77.5	32.5	5,194	2,220	7,415	4.0	297	7,118	2,092	40.12	
1971.....	22,590	7,502	7,694	77.0	33.6	5,777	2,585	8,362	4.0	334	8,028	2,023	38.80	
1976.....	25,234	8,349	8,602	76.5	34.7	6,387	2,985	9,372	4.0	375	8,997	1,956	37.41	
1981.....	28,247	9,249	9,546	76.0	35.8	7,022	3,418	10,440	4.0	418	10,022	1,891	36.27	
1986.....	31,546	10,248	10,617	75.5	36.9	7,737	3,918	11,655	4.0	466	11,188	1,829	35.08	
1991.....	35,107	11,457	11,860	75.0	38.0	8,593	4,507	13,100	4.0	524	12,576	1,768	33.91	

TABLE 19-1 CANADIAN ECONOMIC GROWTH, 1926-1991 (Continued)

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Year	Total Man-Hours of Labour-Civilian	Real Output per Man-Hour	Gross Domestic Product-Civilian	Defence-Value Added-Ratio to GDP _c	Defence-Value Added	Gross Domestic Product	Interest and Dividends Paid Abroad -Ratio	Interest and Dividends Paid Abroad	Interest and Dividends Rec'd from Abroad -Ratio	Interest and Dividends Received from Abroad	Gross National Product	Compound Annual Growth Rates
Symbol	N _{ch}	pL	GDP _c	GM _i /GDP _c	GM _i	GDP	π_{di}/GDP_c	π_{di}	π_{di}/GDP_c	π_{di}	GNP	°GNP
Unit	m.m-h	l 57\$	m 57\$	r	m 57\$	m 57\$	r	m 57\$	r	m 57\$	m 57\$	% p.a.
1926.....	9,951	1.0416	10,365	.001544	16	10,381	.03801	394	.005403	56	10,043	↑
1931.....	9,492	1.1257	10,685	.001685	18	10,703	.07319	782	.01011	108	10,029	↑
1936.....	9,780	1.1398	11,147	.001794	20	11,167	.06423	716	.01534	171	10,622	↑
1941.....	11,666	1.3871	16,182	.05080	822	17,004	.03547	574	.007107	115	16,545	↑
1946.....	11,430	1.7519	20,024	.02667	534	20,558	.02247	450	.005194	104	20,212	↑
1951.....	11,649	2.1166	24,656	.01030	254	24,910	.02000	493	.005070	125	24,542	↑
1956.....	12,585	2.4971	31,426	.01451	456	31,882	.01651	519	.004614	145	31,508	↑
1961.....	13,114	2.6396	34,616	.01384	479	35,095	.02175	753	.005402	187	34,529	↓
1966.....	14,891	3.0231	45,017	.01362	613	45,630	.02085	939	.005000	225	44,916	5.4
1971.....	16,241	3.4622	56,230	.01339	753	56,983	.01995	1,122	.005000	281	56,142	4.6
1976.....	17,598	3.9652	69,780	.01317	919	70,699	.01904	1,329	.005000	349	69,719	4.4
1981.....	18,952	4.5412	86,065	.01295	1,115	87,180	.01814	1,561	.005000	430	86,049	4.3
1986.....	20,463	5.2010	106,428	.01272	1,354	107,782	.01724	1,835	.005000	532	106,479	4.4
1991.....	22,234	5.9566	132,439	.01250	1,655	134,094	.01634	2,164	.005000	662	132,592	4.5

TABLE 19-1 CANADIAN ECONOMIC GROWTH, 1926-1991 (Continued)

Year	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)
	National Consumption as Prop. of GNE	National Consumption	Public Cons., as Prop. of Nat. Cons.	Public or Gov't. Consumption	Private Consumption	Defence Expend. as Proportion of GNE	Defence Expenditure	National Saving	National Saving Ratio	Non-durable Goods	Durable Goods	Services
Symbol	C^{no}	C^n	$C_e/c_n \times 100$	C_e	C	G_M^*	G_M	S^n	S^{no}	C_{nd}^*	C_d^*	C_s^*
Units	%	m 57\$	%	m 57\$	m 57\$	%	m 57\$	m 57\$	%	%	%	%
1926.....	75.1	7,545	10.2	773	6,772	0.3	34	2,463	24.5	49.39	8.49	42.12
1931.....	89.7	8,994	11.8	1,059	7,935	0.4	41	995	9.9	56.77	7.74	35.49
1936.....	85.5	9,085	10.2	930	8,155	0.5	56	1,480	13.9	57.22	8.03	34.75
1941.....	68.1	11,275	10.4	1,176	10,099	12.6	2,090	3,179	19.2	57.62	7.85	34.53
1946.....	74.6	15,074	7.5	1,128	13,946	6.8	1,383	3,755	18.6	59.82	7.05	33.13
1951.....	70.7	17,360	9.9	1,723	15,637	5.3	1,303	5,880	24.0	58.06	10.98	30.95
1956.....	70.2	22,129	12.0	2,651	19,478	6.0	1,890	7,489	23.8	51.53	12.99	35.48
1961.....	76.3	26,345	13.2	3,486	22,859	4.2	1,452	6,732	19.5	51.29	11.71	37.00
1966.....	75.0	33,687	13.92	4,689	28,998	4.0	1,797	9,432	21.0	50.25	12.08	37.67
1971.....	75.0	42,106	14.63	6,160	35,946	4.0	2,246	11,790	21.0	49.20	12.47	38.33
1976.....	75.0	52,289	15.35	8,026	44,263	4.0	2,789	14,641	21.0	48.15	12.85	39.00
1981.....	75.0	64,537	16.07	10,371	54,166	4.0	3,442	18,070	21.0	47.10	13.23	39.67
1986.....	75.0	79,859	16.78	13,400	66,459	4.0	4,259	22,361	21.0	46.05	13.61	40.34
1991.....	75.0	99,444	17.50	17,403	82,041	4.0	5,304	27,844	21.0	45.00	14.00	41.00

TABLE 19-1 CANADIAN ECONOMIC GROWTH, 1926-1991 (Concluded)

Year	(38)		(39)		(40)		(41)		(42)		(43)	(44)	(45)	(46)
	Private Consumption Components		Durable Goods		Services		National Consumption Per Capita		Growth Rates		Total Gov't Spending as Proportion of GNE	Total Gov't Spending	Gov't Investment	Total Private Sector Savings
	Non-durable Goods		C _d		C _s		Absolute Value				G ^o	G	GI _g	S ^o -GI _g
	m 57\$	m 57\$	m 57\$	m 57\$	m 57\$	m 57\$	1-57\$	c ^a	o _c ^a	% p.a.	%	m 57\$	m 57\$	m 57\$
1926.....	3,345	575			2,852		798.3		↑		10.3	1,034	227	2,236
1931.....	4,505	614			2,816		866.8				15.1	1,513	414	581
1936.....	4,666	655			2,834		829.7				11.8	1,254	268	1,212
1941.....	5,819	793			3,487		979.8				20.0	3,302	36	3,143
1946.....	8,343	983			4,620		1,226.3				14.8	2,991	480	3,275
1951.....	9,080	1,718			4,840		1,239.2		1.7		15.1	3,713	687	5,193
1956.....	10,037	2,530			6,911		1,376.1				18.0	5,664	1,123	6,366
1961.....	11,724	2,676			8,459		1,444.5		↓		19.1	6,608	1,670	5,062
1966.....	14,571	3,503			10,924		1,659.8				20.1	9,028	2,542	6,890
1971.....	17,685	4,482			13,778		1,863.9		2.3		21.1	11,846	3,440	8,350
1976.....	21,313	5,688			17,263		2,072.2		2.1		22.1	15,408	4,593	10,048
1981.....	25,512	7,166			21,488		2,284.7		2.0		23.1	19,877	6,064	12,006
1986.....	30,604	9,045			26,810		2,531.5		2.1		24.1	25,661	8,002	14,359
1991.....	36,918	11,486			33,637		2,832.6		2.3		25.1	33,281	10,574	17,270

SOURCE: Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer 1964, Chapter 7.

increased opportunities for women in the expanding service industries will permit a growing number of women to enter the labour force. The rapid changes in labour force participation that have characterized the past decade is not expected to continue to the same extent and we have therefore allowed for some slowing down in both these trends in the future. The downward trend in male participation was projected forward so that it declines from 80 per cent in 1961 to 75 per cent in 1991; while the upward trend for females was projected so that it grows from 28.8 per cent in 1961 to 38 per cent in 1991. The net result of these counteracting trends was that over-all participation is projected as rising moderately, from 54.3 per cent in 1961 to 55.3 per cent in 1991. As a consequence with the Canadian population rising from 18.2 million in 1961 to 35.1 million in 1991, the civilian labour force is expected to grow from 6.5 million to 13.1 million.

FROM LABOUR FORCE TO PRODUCTION

The labour force or labour supply is only a potential input into production. The actual input depends upon the rate of unemployment, the hours of work per week and per year, the degree of skill and education brought to the task, and finally the intensity of effort. There are thus many dimensions to labour input. We must attempt to see the trend they produce.

Unemployment

The rate of unemployment was approximately 2.5 to 3 per cent of the civilian labour force in the late 1920's, rose to 20 per cent or more in the depressed nineteen thirties, was 12 per cent as late as 1940, about 2 per cent later in the war, and ranged from 2.5 to 4 per cent in the post-war up to 1953. With the recessions of 1954 and 1957 the rate moved to over 4 per cent and from 1958 onward has been 6 and 7 per cent.¹ The evidence presented both in our study on Canadian Economic Growth, and of the Special Committee of the Senate on Manpower and Employment, indicate that Canada has had a serious unemployment problem for some years.² With the elimination of the backlog of demand for consumer goods and the ces-

¹ The percentage refers to the average ratio for the year of the numbers of persons in the labour force.

² "Over the past decade there has been an upward drift in the general level of unemployment. This tendency has been especially pronounced since the end of the 'boom' in 1956-57. During 1960 the average rate of unemployment was about 7%, a rate which is of major concern both from the standpoint of lost human opportunities and lost production." *Final Report of the Special Committee of the Senate on Manpower and Employment*, Ottawa: Queen's Printer, 1961, p. 2.

sation of the resource investment boom of 1955-57, the increased competitiveness of foreign producers and the fact that more recent innovations of automation, electronics, computers, atomic energy, and space research stimulate employment at the outset, but eventually are labour saving, (their labour-saving effect seems ultimately to more than offset their capital-using effects on final over-all employment) led to an increase in unemployment that is reported to be higher than that of any industrialized nation.¹ Indeed, technological change in all its forms may have enabled the private commodity producing sector of the economy to achieve a high rate of productivity increase particularly in manufacturing industries. Hence increasing manufacturing output has not been accompanied by corresponding increases in employment. It has been mainly the rising rates of production of government and other services sectors, along with the capital investment that this has required, which has prevented the level of unemployment from rising to levels even higher than those actually recorded. We have referred to this point in our discussion in Chapter 11.

What we are suggesting is that much more than a structural problem is creating the current high levels of unemployment in North America. Investment itself, despite the growth of government capital expenditures, and the availability of potential savings, has been at a relatively low level since 1957 and the adjustment to structural changes has become more difficult in the circumstances of a slow rate of economic growth.

It is beyond our Terms of Reference to delve into the causes of a continuing high level of unemployment or to make recommendations how it might be reduced. But a rapid increase to a relatively high level of demand, including a high level of demand for health services, would provide the largest immediate supply of goods and services for consumption and investment and with it a higher level of employment and a reduction in the volume of unemployment. It is with a sense of sincere conviction that we state that an expanding health industry has made, and can continue to make, an important contribution both directly and indirectly to the economic growth of Canada and rising levels of employment and income. What rate of economic growth should be aimed at and what could be realized, as well as what path should be taken to reach it, is a challenge which Canada faces. Despite the growth of the Canadian labour force and the spread of automation, with the appropriate private and public policies the Canadian economy could move along a growth path with minor fluctuations varying between an average rate of unemployment of four and five per cent per year.

¹ *Measuring Employment and Unemployment*, U.S. President's Committee to Appraise Employment and Unemployment Statistics, Washington: U.S. Government Printing Office, 1962, p. 220.

Our projections indicate that the long-term level of unemployment of four per cent could be attained by 1966,¹ and that while unexpected fluctuations around this trend rate will occur between 1966 and 1991—as a consequence of the business cycle—this average trend could be maintained. As an alternative, to take account of the imperfection of economic policy and the economic system, estimates are presented of the employed labour force on the basis of an average rate of unemployment of five per cent per year.

We recognize that a range of 4 to 5 per cent rate of unemployment may be considered by some observers as too high, by some as too low. We believe in being realistic, admitting the difficulties which a predominantly private enterprise country is facing in achieving a high level of employment while at the same time relying on the good sense of the Canadian people, and its democratic institutions, to pursue economic policies which will keep the waste of human resources associated with unemployment to a minimum reconcilable with a free society. As a consequence our projection is based on an assumed rate of unemployment somewhat higher than the 3 per cent projected by the Royal Commission on Canada's Economic Prospects² or the one per cent aimed at by a country like Sweden. Our range of 4 to 5 per cent is about the same or moderately higher than the interim target of 4 per cent suggested by the administration in the United States.³ To the extent that policies are developed that reduce the level of unemployment below 4 to 5 per cent so will Canada be able to achieve a higher standard of living than that projected in our Report. Unemployed men and unused capital resources produce nothing but they must be maintained. Lower unemployment means a more rapid rate of economic growth and the possibility of more consumption and investment, both private and public, which otherwise would be lost forever. We wish to reiterate: One of the important consequences from such an increased output is the possibility of providing expanded health services with their numerous benefits in human and economic terms.

Hours of Labour

Hours of work, both in agriculture and industry, have steadily declined as Canadian society has become more productive and wealthier and Canadians have chosen to take part of their productive gains in more leisure instead of more goods and services. The long-term rate in the average

¹ This compares with a rate of between 5 and 6 per cent in 1962 and 1963.

² Royal Commission on Canada's Economic Prospects, *Final Report*, Ottawa: Queen's Printer, 1957, p. 325.

³ *Economic Report of the President*, transmitted to the Congress, January 1963. Together with The Annual Report of the Council of Economic Advisors, Washington: United States Government Printing Office, 1963, p. 42. The Report stresses the desirability of aiming over the longer term at a ratio of the number of unemployed to labour force below 4 per cent.

annual number of hours worked by each Canadian worker has declined at an annual average of 0.8 per cent since 1926 while the hours worked per week fell from 55 hours in the period 1926-31 to 41.5 hours in 1961. The rate of decline in the work week has been somewhat lower in the post-war period, 0.67 per cent a year on the average and it is this trend which has been projected to 1991.¹ In this projection, average hours worked per year decline from 2,164 in 1961 to 1,768 in 1991, and hours worked per week fall from 41.5 to about 34.

Combining the employment and hours worked projections we get an increase of the labour in the production process from 13,114 million man-hours in 1961, to 22,234 million in 1991, with a growth rate of 1.75 per cent a year.²

Productivity

When the physical volume of output of an economy is divided by the quantity of a factor of production used in production the result is called the average productivity of that factor of production. If the factor of production were labour, then the total output divided by the total man-hours of labour would yield the average productivity of labour. This does not mean that all productivity is to be attributed to the factor selected. In fact, improvements in this productivity ratio may be due to increases in the quantity of other factors of production, to qualitative improvements in other factors or to socio-technical improvements in general. On the other hand, some or all of the gains in productivity may be due to the factor in question.

The detailed analysis of this growth in productivity is to be found in our study dealing with economic projections.³ Suffice to say here that the long-term growth of the average productivity of labour between 1926 and 1961 was such as to raise the real output per man-hour from \$1.04 to \$2.64. (Output is measured in constant (1957) dollars as shown in Table 19-1). This was the equivalent of a long-term growth in the average productivity of labour of 2.69 per cent a year of which part was the consequence of the accumulation of the stock of capital per man-hour of labour and part was the result of improvements in knowledge, skill and technology—the socio-technical improvement variable—over this period.⁴

Changes in average productivity are subject to cyclical swings tending to fall in recession periods and to rise in prosperous periods. Administrative and maintenance staff cannot be reduced as rapidly as output falls, while

¹ See Table 19-1.

² See Table 19-1.

³ Brown, T. M., *op. cit.*, Chapters 3 and 6.

⁴ The supply of capital per man-hour grew at the trend rate of 1.33 per cent a year and the socio-economic variable at the trend rate of 1.7 per cent a year.

TABLE 19.2 ESTIMATED VALUE OF TOTAL AND PER CAPITA REAL GROSS NATIONAL PRODUCT (GNP) AND NATIONAL PER CAPITA CONSUMER EXPENDITURE,* ASSUMING DIFFERENT UNEMPLOYMENT AND AVERAGE LABOUR PRODUCTIVITY RATES, CANADA, SELECTED YEARS, 1961-1991
(constant (1957) dollars)

Year	Gross National Product†			Per Capita Consumer Expenditures†		Gross National Product‡			Per Capita Consumer Expenditures‡		Gross National Products*			Per Capita Consumer Expenditures*	
	Total		Per Capita	Growth Rate	%	Total		Per Capita	Growth Rate	%	Total		Per Capita	Growth Rate	%
	\$'000,000	\$	\$			\$'000,000	\$	\$			\$'000,000	\$	\$		
1961 ^b	34,529	1,893	1,444	—	—	34,529	1,893	1,444	—	—	34,529	1,893	1,444	—	—
1966	44,916	2,213	1,660	3.3	5.2	44,449	2,190	1,643	3.1	5.2	43,377	2,137	1,603	2.1	2.1
1971	56,142	2,485	1,864	2.3	4.5	55,553	2,459	1,844	2.2	4.5	52,909	2,342	1,756	1.7	1.7
1976	69,719	2,763	2,072	2.1	4.5	68,994	2,734	2,051	2.0	4.5	64,126	2,541	1,906	1.7	1.7
1981	86,049	3,046	2,285	2.0	4.2	85,154	3,015	2,261	2.0	4.2	77,239	2,734	2,051	1.5	1.5
1986	106,479	3,375	2,531	2.1	4.4	105,372	3,340	2,505	2.0	4.5	93,275	2,957	2,217	1.5	1.5
1991	132,592	3,777	2,833	2.3	4.5	131,213	3,738	2,803	2.2	4.5	113,348	3,229	2,421	1.7	1.7

* Includes private and public consumption.

† Based on an average level of unemployment of 4 per cent of the civilian labour force and average labour productivity of 2.75.

‡ Based on an average level of unemployment of 5 per cent of the civilian labour force and average labour productivity of 2.75.

§ Based on an average level of unemployment of 5 per cent of the civilian labour force and average labour productivity of 2.25.

^b Revised data for 1961, based on Dominion Bureau of Statistics, *National Accounts Income and Expenditure, 1962*, indicate that total GNP in 1961 amounted to \$35,023 million and per capita GNP amounted to \$1,920.

SOURCE: Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer 1964, Chapter 8.

direct labour can be so reduced. A further cause of decline may be that plants are achieving their highest level of productivity when used at or close to optimum capacity. Below this level they may be much less productive. A further cause of low productivity in recession periods is the impact on socio-technological improvement. We cannot expect education and research to progress at the same pace in depression as in prosperity. Nor can we expect innovations to be pursued as vigorously in depression as at other times for reasons of low demand and difficulties of finance. Nor can we expect workers to have high morale and a proper attitude toward work and productivity when there is wide-spread unemployment. There is a productivity bonus to society which may itself pay for the costs of economic policies aiming at a continuing rate of economic growth accompanied by a high level of employment and income. We cite as evidence the growth of productivity of labour in the post-war period. From 1946 to 1956, real output per man-hour rose from \$1.75 to \$2.50, as can be seen from Table 19-1, or the equivalent of a trend rate of growth of 3.6 per cent a year. In the recent period of economic slowdown, real output per man-hour rose only from \$2.50 in 1956 to \$2.64 in 1961, a trend rate of growth of 1.2 per cent a year.

For our projection of output, we have felt that if the level of unemployment can be held at 4 per cent, real output per man-hour, measured in constant (1957) dollars should rise to \$5.96 by 1991, the equivalent of a trend rate of growth in average labour productivity of 2.75 per cent a year, approximately the equivalent rate recorded in the period 1926 to 1961.¹

We have, however, made an alternative assumption of an unemployment rate of 5 per cent. Under these circumstances we project that the average productivity of labour will fall below the long-term trend, and that the level achieved, for the reasons outlined above may amount to only 2.25 per cent a year.²

PROJECTED GROWTH OF TOTAL REAL OUTPUT

Given our projected rate of growth of total man-hours of labour—assuming a 4 per cent unemployment rate—and given that the average productivity of labour is projected to grow at a rate of 2.75 per cent a year, Table 19-1 indicates that gross domestic civilian product is expected to increase from \$34.6 billion in 1961 (measured in constant 1957 dollars) to \$132.4 billion in 1991. We need not go into the detail here concerning the adjustments needed to convert gross domestic civilian product into Gross National Product since the interested reader can consult our study dealing

¹ *Ibid.*, Chapter 6.

² See Table 19-2.

with Canadian Economic Growth.¹ Suffice to say that the adjustments involve the addition of the output of the defence industry not already included in gross domestic civilian product to obtain Gross Domestic Product, and the addition of interest and dividends received from abroad and the subtraction of interest and dividends paid abroad in order to obtain Gross National Product.

On the basis of these adjusted projections it is estimated that GNP, measured in real terms, would increase nearly fourfold over the 30 years of projection rising from \$34.5 billion in 1961 to \$132.6 billion in 1991.² Total GNP may grow at the rate of 5.4 per cent a year in the first five-year period as the economy achieves a somewhat higher proportionate level of employment in 1966. Its subsequent rate of growth would be somewhat less, about 4.5 per cent a year compared with the average rate achieved in the period 1926-61 which includes the depressed thirties of 3.6 per cent and with the average rate of growth of GNP of 5 per cent achieved when Canada had a relatively high level of employment, as for example in the 1946 to 1956 period. Per person, this projected increase in output would result in an increase of almost 100 per cent over the thirty years as per capita GNP is projected to rise from \$1,893 in 1961 to \$3,777 in 1991, both measured in constant (1957) dollars.

The projection of Gross National Product based on a 5 per cent unemployment rate and a 2.25 per cent labour productivity has been carried out in two stages; first with unemployment at an average annual rate of 5 per cent and labour productivity of 2.75 per cent and then with a lesser rate of average labour productivity of 2.25 per cent. The results of these calculations are tabulated in Table 19-2. With the first set of assumptions we get a slightly slower growth path, with only minor reductions in the growth rate of output. In the period 1961-66, the annual average rate of growth projected is 5 per cent compared with 5.2 per cent in our earlier projection and is only slightly lower in later years. Total GNP in 1966 is only one per cent lower at \$44.4 billion and in 1991 is still only a little over one per cent less at \$131 billion.³

¹ Brown, T. M., *op. cit.*

² See Tables 19-1 and 19-2. We have used throughout this Report the original estimates of Gross National Product for 1961 as published by the Dominion Bureau of Statistics. As we explained in footnote b to Table 19-2, the Dominion Bureau of Statistics has subsequently revised its estimate of Gross National Product for 1961 from a preliminary total of \$34,529 million to \$35,023 million in constant dollar terms. In current dollar terms the change was from \$36,844 million to \$37,421 million. For the purpose of the current dollar projections up to 1971, shown in Table 19-3, we have used the revised figures of Gross National Product for 1961 as a base (see Brown, T. M., *op. cit.*, Chapter 7, p. 11). It should also be noted that if this revision were incorporated into the projection of GNP shown in Table 19-1, the effect would be to raise the estimated GNP for 1991 by about \$1,830 million or almost 1.5 per cent.

³ Because this alternative projection differs but slightly from our first projection we have made no further use of it.

Using the second set of assumptions which are somewhat more compatible, since a lower rate of employment would tend to be associated with a slower growth rate in productivity, as shown in Table 19-2, we still get a substantial growth rate of Gross National Product though not at the level projected with lower employment and higher productivity. By 1966, the projected growth rate of GNP is 4.7 per cent and for the remainder of the period it is projected at 4 per cent. The result of this is that in 1966 GNP is about 3.5 per cent lower at \$43.4 billion and in 1991 is over 14 per cent lower at \$113 billion. Per capita GNP in 1991, given the most unfavourable projection would still amount to about \$3,229, over 70 per cent greater than it had been in 1961.

CURRENT DOLLAR PROJECTIONS OF GROSS NATIONAL PRODUCT

The projection of economic quantities is best carried out in terms of physical volume, that is with quantities measured in the fixed prices or fixed price level of a base period. In exceptional cases where the prices of specific goods and services might be expected to rise rapidly it is useful to convert projections calculated in constant dollars of some base period [e.g., in constant (1957) dollars] to money costs in market prices. To do this it is necessary to project future movements of price levels which are composed of trends, cycles and irregular price movements. Given the vast difficulties associated with this exercise we have projected here only a trend in the implicit price index of Gross National Expenditure.

The long-term growth rate of the price level for GNE during the period 1926 to 1962 has been $2\frac{1}{8}$ per cent a year. Much of this increase took place in the immediate post-war period, a consequence of the removal of price controls and the post-war scarcity of consumer goods, and in the more recent period 1954 to 1962, the annual average rate of increase has been 1.94 per cent a year. In the light of the limitations of the data available for projecting future price trends it has been assumed that the latter trend will persist until 1971 and the rate of 1.94 per cent was used in projecting GNP in current dollars between 1961 and 1971. The price level so projected was applied to the GNP values for Projection 1 and the variant which assumes a 5 per cent rate of unemployment and a growth rate in the average productivity of labour of 2.25 per cent. Table 19-3 gives these projections in current dollars and indicates that if these trends were realized the Gross National Product would be between \$69 billion and \$74 billion in 1971. On a per person basis the increase would be between 50 and 60 per cent as per capita income would increase from \$2,052 in 1961 to between \$3,076 and \$3,264 in 1971.

TABLE 19-3 PROJECTED GNP IN CURRENT DOLLARS, CANADA,
1961, 1966 AND 1971

Year	Projection I*		Variant I†	
	Total	Per Capita	Total	Per Capita
	\$'000,000	\$	\$'000,000	\$
1961.....	37,421	2,052	37,421	2,052
1966.....	53,587	2,640	51,751	2,550
1971.....	73,734	3,264	69,487	3,076

*Assuming a 4 per cent rate of unemployment, average labour productivity of 2.75 and a compound growth rate of the price level of 1.94 per cent a year.

†Assuming a 5 per cent rate of unemployment, average labour productivity of 2.25 per cent and a compound growth rate of the price level of 1.94 per cent a year.

SOURCE: Brown, T. M., *Canadian Economic Growth*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 7, Table 3.

ALLOCATION OF OUTPUT

In an economy operating at a high level, the broad social choices that are available to individuals and society as a whole are between leisure and output since the more leisure the less that total output will be. In a relatively affluent society it seems to be the case that the consumption of leisure becomes increasingly important compared to the consumption of goods and services. As a consequence, the average number of hours worked per year declines, an experience we can observe for Canada for a long period of time. We have projected this trend into the future, as explained earlier.

Society, and the individuals that make it up have another choice: how much of their income should be devoted to consumption and how much should be saved. If output is used up in consumption, then labour and capital will be employed to replace this output and unemployment would tend to be minimized. However, consumption today does not provide for a higher consumption in the future. This can only come about by some combination of capital accumulation and technical progress and, as a consequence, part of total output must not be consumed. It must take the form of additions to the supply of capital goods. In short, a community if it wishes to achieve a high and continuing rate of economic growth must save (forego consumption) in order to accumulate investment goods.

In this context it is necessary to recall that not all spending classified as consumption is in fact consumption spending. Because the basic data for our projections, the National Accounts, still treat the current costs of education and health as consumption expenditures, investment in human capital is classified as a consumption outlay not an investment outlay. Again what is classified as public consumption consists of government current expenditures, excluding defence expenditures, of the Federal, Provincial and municipal governments for police and fire protection, the judiciary, road maintenance, sewage and garbage disposal, government scientific research, economic analysis, communicable disease control, education and a host of other services. The proportion of such spending which is either an intermediate expenditure or an outlay with some expectation of economic return is unknown but is still substantial.

Even if a community foregoes consumption, it does not necessarily follow that available resources will be used to add to the capital stock. They may merely lie idle in the form of unemployed men, buildings and machines and the foregone consumption of the community, the savings of its members, are brought to nought if capital accumulation does not take place at the rate required. If investment goods, whether private or public, were produced in response to savings; that is if savings were constructively employed to acquire these capital goods; this would lead to more production and consumption in the future. The result is continuing economic growth.

The maintenance then of a high level of output, as well as employment, requires a continuing large volume of investment, both private and public, or, if this is not forthcoming, a high level of private and public consumption.

The solution of this dilemma thus involves the projection of a likely level of investment, along with a level of consumption that will lead to the employment of almost all available labour and capital and which will stimulate technological innovation and risk-taking enterprise. To choose a low level of consumption and a large volume of savings may mean a slow rate of increase of income accompanied by a high level of unemployment. The reason: sufficient investment is not forthcoming to match the volume of savings. On the other hand, if it were possible to ensure that all savings were transformed into investment goods, then a high level of savings might involve a lower level of consumption today in favour of a higher level of growth and future consumption. These are complex and difficult problems that involve solutions far beyond the frame of reference of this Commission. In order to support our estimate of GNP and to estimate the significance of publicly financed health expenditures it is necessary to make some assumptions about the possible future allocation of output.

Essentially what we have done is to project that total national consumption, including private consumption and government current expenditures, will account for 79 per cent of total output and that savings-investment, again including government investment expenditures, will account for 21 per cent.¹ Total consumption includes 75 per cent for civilian consumption and 4 per cent for defence spending. The allocation of 21 per cent of output to savings-investment implies that we have not projected the highest possible rate of economic growth associated with a high level of savings-investment since this latter category has risen as high as 25 per cent of total output in periods of intensive investment such as 1926-29 and 1955-56. Alternatively, even with a level of savings equal to 21 per cent of GNP, we are still projecting a rate of unemployment of labour of 4 per cent.

With 21 per cent of total output allocated to national savings-investment, Table 19-1 indicates that in constant dollar terms, savings are projected to rise from \$6.7 billion in 1961 to \$27.8 billion in 1991, an increase of over fourfold in this period. Defence expenditures are projected to account for 4 per cent of GNE and to rise from \$1.45 billion in 1961 to \$5.3 billion in 1991.² This implies that output in the defence sector will increase almost threefold. Total national consumption, both private and public as shown in Table 19-1 is projected to rise from \$26.3 billion to \$99.4 billion in 1991 or nearly fourfold, while per capita private and public consumption is projected to rise from \$1,444 in 1961 to \$2,833 in 1991 or to double over a period of thirty years. Such an increase would be the equivalent of an average annual percentage rate of improvement of 2.2 per cent a year compared to 1.7 per cent over the period 1926-1961. The private consumption component is projected to rise from \$1,253 in 1961 to \$2,337 in 1991 and the public consumption component to rise from \$191 to \$496. Despite the somewhat more rapid increase projected for public consumption over the thirty years, private consumption expenditures are still almost five times as great as public consumption in 1991. Part of private consumption expenditures in a sense will be financed by government since transfer payments are a part of disposable income available to finance private consumption.

Even with the projected higher rate of unemployment and lower rate of productivity the growth of output would still be substantial. Gross National Product is projected to increase to \$113.3 billion by 1991 and per capita consumption in real terms—a rough equivalent of the level of living—while

¹ See Royal Commission on Canada's Economic Prospects, *op. cit.*, Table 17-1, p. 336, which estimated 77 per cent would go into national consumption including defence and 23 per cent for savings-investment.

² *Ibid.*, Table 17-1, p. 336, which projected defence expenditures as between 3.9 and 4.1 per cent of GNE in the period 1979-1981.

it no longer doubles, does increase by almost 70 per cent over the thirty years which is equivalent to an annual rate of increase of over 1.7 per cent a year.

Our opinion then is, given existing information, that to project a higher level of savings would not be consistent with a rate of unemployment between 4 and 5 per cent. A level of savings such as we have projected would provide a growing stock of capital consistent with the growth of the labour force and a trend rate of growth of average labour productivity of between 2.25 and 2.75 per cent. Sufficient capital and labour would be forthcoming to enable GNP to grow at a rate of 5.4 per cent a year in real terms in the period ending in 1966, providing the economy returns to a moderately higher average level of employment (96 per cent of the labour force). Subsequently it could grow at a rate of 4.5 per cent a year which is not too far removed from the historical average high employment and high savings growth rate of 5 per cent a year¹ and is considerably higher than the 3.6 per cent growth rate experienced over the whole period 1926-61.² Nor should it be forgotten that more investment output could be achieved if the unemployment rate could be reduced below 4 per cent while if unemployment increases to 5 per cent and the rate of productivity increase falls to 2.25 per cent, the trend rate of growth of income is even lower than that described above.

We do not wish it to be inferred that we have made a choice for Canadians between consumption and savings. What we have done is to assume that private and public economic activity will be high enough to reduce the level of unemployment to 4 or 5 per cent of the labour force and on this basis we have projected the trends which we believe to have been operating in the Canadian economy over a number of years and are currently continuing. Circumstances beyond the control of Canadians along with private and public policy decisions could materially affect these trends but only the events of the future will tell us whether this will in fact be the case.

ALTERNATIVE PROJECTIONS OF OUTPUT

In the study on Canadian Economic Growth prepared for us, two other estimates of future Gross National Product were included using different and somewhat more complex theoretical analyses.³ The result of the

¹ This compares with an average of 4.9 in 1963.

² It will be noted from Table 19-1 that the proportion of Gross Domestic Product paid abroad is projected as declining from .022 per cent in 1961 to .016 per cent in 1991 indicating a diminished dependence on foreign capital in the latter year.

³ Brown, T. M., *op. cit.*, Chapters 8 and 10.

first of these projections does not differ significantly from the projections used in this study. The standard of living almost doubles over the period 1961-91, and total output measured in constant (1957) dollars rises to \$132.7 billion in 1991 compared to \$132.4 billion in the projections presented in this chapter.

The other projection is based upon an econometric model of economic growth and attempts to estimate the main behaviour equations of the economy. That is, it is designed to explain and project the demand for goods and services as well as the supply. This particular projection¹ brings out the tendency of an economy with a high degree of technological progress to generate a substantial amount of unemployment even when the rate of growth of national output is rapid. The model also indicates that pronounced material gains can be made if suitable economic policies are pursued to enable the nation to reap the benefits of both a high level of technological progress and a high level of employment. These gains accrue not only to those who otherwise should suffer from unemployment but also to the nation as a whole. The standard of living increases rapidly for all Canadians, business profits grow at an encouraging rate, increasing economic benefits can be passed on to less developed countries through economic aid and technical assistance and government deficits can be eliminated and converted into surpluses. The public policies used to produce these results include changes in tax rates and the size of transfer payments along with variations in the level of public consumption and a number of other economic policies, but all directed essentially to stimulate demand.

The implications are clear. If the Canadian economy can achieve a high rate of economic growth on the basis of a reasonably high level of employment, under such prosperous conditions Canadians will be able to continue to increase their per capita consumption of goods and services, most wants can be more fully satisfied and some wants formerly considered luxuries may gradually come to be considered necessities. If, however, this rate of economic growth were not achieved, then additional public stimulants to demand would become necessary and both private and public consumption and investment likely would then need to be stimulated. In both cases it is possible for Canadians to increase their consumption in the future without ultimately reducing their standard of living. In the latter case, the choice seems to be between a higher rate of unemployment and more present or future consumption since the economic potential is there.

¹ This approach is only a preliminary attempt to project total output using an econometric model technique. The economic analysis on which this model is based is subject to further development and the conclusions presented must, therefore, be accepted as tentative.

PUBLIC SECTOR IN THE CANADIAN ECONOMY

In our discussion of the distribution of output between consumption, and investment we made no distinction between the persons or institutions responsible for such expenditures though we did refer to the future role of government spending in maintaining a relatively high level of employment in a growing economy. We turn now to an examination of the role of government expenditures in the Canadian economy and to assess the changing trends in such expenditures since growth of health expenditures is closely associated with these trends.

Governments in Canada have always played an important part in economic and social development, both by direct and indirect means, public expenditures, transfer payments, subsidies, taxes, tariff and monetary policy. During the decades following Confederation came subsidized railway construction, protective tariff policies, and encouragement of immigration. World War I brought extension of government activities into secondary industries as well as in the traditional fields of military efforts. The automobile committed governments to large road-building programmes in the 1920's, while the depression and World War II necessitated much broader government action in the economic sphere than ever attempted before. In the post-war period Canadian governments have continued to produce goods and services for community consumption as well as to redistribute income. In addition, they have been expected to maintain a high level of employment, reasonable price stability and to encourage continuing economic growth. All of which have tended to increase the role of government in the economy. Thus tariff protection has been continued, subsidies have been provided for many industries, transfer payments have been increased and taxation has been used as a device for stimulating particular types of economic growth.

This expansion of direct and indirect government activity has been associated with what seems to be an increasing use of the institution of government to meet a variety of new and pressing needs. Problems and collective needs arise because men live in association and are interdependent in economic and social respects. Government is the only universal agency in the nation, and it is the only institution which can enforce its laws and regulations. Democratic government is an agency which enables us to transcend exclusively individual and selfish drives and to provide benefits for all, or at least a majority, of the nation's individuals. Many different arrangements have been developed to implement economic and social policies, the result of a complex process of discussion, negotiation, voting, decision-making, and budgeting. Throughout this procedure there is an emphasis

upon finding out what is the overriding national interest and to discover the means for achieving acceptable solutions in the interdependent society of today.

The process of industrialization and advancing technology, specialization and the division of labour, urbanization and the need for spatial organization of economic and social activities all have exerted an upward pressure on government expenditures in developing and developed countries. The higher the level of per capita income, the higher the percentage of the national income devoted to public service tends to be. Fundamentally, the development of government is part and parcel of the whole process of economic growth. In western countries, the expansion of government activities has been, and continues to be, far more a matter rooted in technological and economic than in ideological factors. It is largely force of necessity in an interdependent, industrialized, and specialized society which is responsible for the growth of the public sector rather than political evaluations.

To be specific, many private wants contribute to an increase in expenditures on public goods and services. An obvious case is the automobile; the more private expenditure on automobiles, the more public outlays are required for roads, traffic signals, and policemen. Again the increased awareness of the benefits to be derived from investment in human capital has led to an increased demand for educational and health services which historically have been provided by governments to a substantial extent. We have discussed in Chapter 12 the role of educational and health services in an increasingly complex and affluent society and there are many other examples of what Galbraith has called expenditures to maintain the "social balance".¹ Advancing technology also affects significantly the pattern of spending. Whether it takes place in the private sector, the government sector or the defence sector, it leads to demands for higher standards of equipment and services requiring highly skilled and therefore relatively costly personnel. Thus government expenditures rise as technology grows.

Finally, increasing specialization, economic interdependence, the growth of inter-generation transfers of income and the desire to achieve national minimum standards of service have increased government transfer payments such as old age pensions, hospital grants, unemployment assistance, and various other social security expenditures. The size of these payments is related to the general level of economic activity so that as the national income increases, transfer payments also grow. Indeed, the growth of public expenditures increasingly has become interrelated with economic growth since on the one hand, government programmes are needed to support

¹ Galbraith, J. K., *The Affluent Society*, Boston, Houghton Mifflin Company, 1958, Chapter 18.

economic growth; on the other, economic growth makes it possible to finance additional programmes without necessarily curtailing other desirable efforts. This does not mean that over the long term government may supplant private economic activity. On the contrary, the economic achievements of Canada over the last century demonstrate both the effectiveness and viability of our way of life. But what we are suggesting, and this we believe earnestly, is that sensible and far-sighted government action should be forthcoming if obstacles to growth are to be eliminated within the framework of Canadian tradition and our concepts of the rights and obligations of the individual.

The effect of a high rate of population growth, shifts in the age structure of the population, rapid urbanization and technological change, investment in human capital and changing social attitudes on the trend rate of growth of government spending is evident in Tables 19-4 and 19-5. In Table 19-4, government expenditures on goods and services in *real* terms, excluding transfer of money to individuals or non-government organizations, are shown to have risen from \$1 billion in 1926 to \$6.6 billion in 1961. As a percentage of GNE, such expenditures have risen from 10.3 per cent in 1926 to 19.1 per cent in 1961.¹ A substantial part of this increase has been the consequence of increased defence spending which still amounted to 4.2 per cent of GNE in 1961² and excluding such expenditures, government outlays for goods and services amounted to barely 15 per cent—a percentage not substantially higher than in 1931. The trend rates of growth of spending, including defence spending, rose in the post-war period to 5.4 per cent a year, compared with a rate of 3.7 per cent in the pre-war period. Excluding defence expenditures the trend rates of growth were 8 per cent in the post-war period compared to 1.5 per cent in the pre-war period.

The payments made by governments to individuals and families, or to business and non-profit corporations on their behalf (the transfer payments and subsidies), are shown in Table 19-5. From \$540 million in 1926, measured in *real* terms, these payments have increased until by 1961 they amounted to \$4.4 billion. As a percentage of GNE they have risen from 5.4 per cent in 1926 to 12.8 per cent in 1961, but until 1956 they accounted for a smaller proportion of GNE than they had done in 1936 and the growth in recent years has been due, to a substantial extent, to the growth of transfer payments to finance investment in human capital either in the form of payments under the hospital insurance programme or grants for higher education.

¹ It should be noted that government business enterprise (e.g., public utilities and government railways) are included in the private sector along with private non-commercial institutions (e.g., universities and hospitals). Governments provide part of the funds used to finance such expenditures and these expenditures are classed as transfer payments and are discussed later.

² This proportion declined to below 4 per cent in 1963.

TABLE 19.4 GOVERNMENT SPENDING FOR GOODS AND SERVICES, BY CLASS OF EXPENDITURE, IN CONSTANT (1957) DOLLARS, CANADA, SELECTED YEARS, 1926-1961

Year	Government Consumption		Government Investment		Investment and Consumption Spending			Defence		Total	
	\$'000,000	Percent- age of GNE	\$'000,000	Percent- age of GNE	\$'000,000	Percent- age of GNE	Trend Rate of Growth % p.a.	\$'000,000	Percent- age of GNE	\$'000,000	Percent- age of GNE
1926.....	773	7.7	227	2.3	1,000	10.0	↑	34	0.3	1,034	10.3
1931.....	1,059	10.6	414	4.1	1,473	14.7	↑ 1.5	41	0.4	1,514	15.1
1936.....	930	8.6	268	2.7	1,198	11.3	↓	56	0.5	1,254	11.8
1941.....	1,176	7.2	36	0.2	1,212	7.4	↓	2,090	12.6	3,302	20.0
1946.....	1,128	5.6	480	2.4	1,608	8.0	↑	1,383	6.8	2,991	14.8
1951.....	1,723	7.0	687	2.8	2,410	9.8	8.0	1,303	5.3	3,713	15.1
1956.....	2,651	8.4	1,123	3.6	3,774	12.0	↓	1,890	6.0	5,664	18.0
1961*.....	3,486	10.1	1,670	4.8	5,156	14.9		1,452	4.2	6,608	19.1

*Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1962*, Ottawa: Queen's Printer, 1963, presents revised data for 1961. Total expenditure, including defence spending amounted to \$6,544 million or 18.7 per cent of real GNE.

SOURCE: Based on Table 19-1.

**TABLE 19-5 GOVERNMENT EXPENDITURES AND TRANSFER PAYMENTS IN
CONSTANT (1957) DOLLARS, SELECTED YEARS, 1926-1961**

Year	Government Consumption and Investment		Government Transfer Payments and Subsidies*		Total		Total Excluding Defence	
	\$'000,000	Percentage of GNE	\$'000,000	Percentage of GNE	\$'000,000	Percentage of GNE	\$'000,000	Percentage of GNE
1926.....	1,034	10.3	540	5.4	1,574	15.7	1,540	15.4
1931.....	1,514	15.1	805	8.0	2,319	23.1	2,278	22.7
1936.....	1,254	11.8	1,095	10.3	2,349	22.1	2,293	21.6
1941.....	3,302	20.0	1,025	6.2	4,327	26.2	2,237	13.6
1946.....	2,991	14.8	3,058	15.1	6,049	29.9	4,666	23.1
1951.....	3,713	15.1	1,880	7.7	5,593	22.8	4,290	17.5
1956.....	5,664	18.0	2,700	8.6	8,364	26.5	6,474	20.5
1961†.....	6,608	19.1	4,407	12.8	11,015	31.9	9,563	27.7

*Deflated by using the implicit price index for personal expenditures on consumer goods and services.

†Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1962*, Ottawa: Queen's Printer, 1963, presents revised data for 1961. Transfer payments and subsidies amount to \$4,550 million or 13 per cent of GNE.

SOURCE: Based on Table 19-1, and Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1926-1962*, Ottawa: Queen's Printer.

Table 19-5 also indicates the total outlays (direct spending plus transfer payments) of all levels of government over this period. From \$1.6 billion in 1926 government expenditures rose to \$11 billion in 1961; that is from 15.7 per cent of GNE to 31.9 per cent. Excluding defence, the percentage spent by governments rose from 15.4 in 1926 to 27.7 per cent in 1961 and amounted to \$9.6 billion in the latter year. On the other hand, until 1956, total government spending as a percentage of GNE had not reached the peak level of the 1930's and if defence spending were excluded, government spending in 1956 was still two per cent of GNE lower than it had been in 1931. If the trend rate of growth of total output had been higher in the latter part of the fifties government spending as a proportion of all spending might have been even less.

The rapid growth of government expenditures that took place in Canada in the post-war period is, however, not out of line with the experience of many other developed countries. Thus about the year 1958, countries like the United Kingdom, Norway, Sweden, West Germany, France, Finland, New Zealand and Australia had levels of spending equal to or greater than that of Canada.¹ Some other developed countries, for example, Belgium, Italy and the Netherlands, fall somewhat below Canada. The level of government spending in many less developed countries is comparatively moderate but this reflects the low level of per capita output in these countries as much as anything else. International comparisons have to be made in a guarded fashion but it appears that Canadian governments do not spend a disproportionately large part of GNP judging by the experience of many other industrially advanced countries.

The growth of public expenditures has not been attributable solely to increased expenditures by any one level of government. All levels of governments have increased their spending as can be seen from Table 19-6. These government expenditures are measured in *current* dollars, and account for a slightly higher proportion of GNE than when measured in constant (1957) dollars; 32.1 compared with 31.9 per cent of GNE. But from 1949 to 1961, the Federal Government accounted ultimately for a smaller proportion of total expenditures (49.8 per cent); the provincial governments accounted for approximately the same percentage (24.5 per cent). While the municipal governments accounted for an increasing share (25.7 per cent). By 1961, the level of Federal Government spending was the equivalent of 16.0 per cent of GNP; provincial expenditures the equivalent of 7.9 per cent and municipal expenditures, the equivalent of 8.2 per cent. The more rapid rate of growth of provincial and municipal expenditures reflects the changing demand for collective goods and investment in human capital associated with

¹ United Nations, *Report on the World Social Situation*, Department of Economics and Social Affairs, New York: The Organization, 1961, Table 3, p. 71.

the automobile, urbanization and rising living, educational and health standards. Since these functions have traditionally been the responsibility of provincial and municipal governments, and as these governments can provide and administer these services more readily than the Federal Government in the vast area that is Canada, it is the spending of these governments that has been rising the most rapidly in the post-war period.

TABLE 19-6 TOTAL GOVERNMENT EXPENDITURES BY LEVELS OF GOVERNMENT, CANADA, 1949, 1955 and 1961*

Item	1949	1955	1961
I. IN MILLIONS OF DOLLARS			
A. Federal†.....	1,987	4,311	5,993
B. Provincial‡.....	928	1,413	2,950
C. Municipal ^a	809	1,556	3,088
TOTAL EXPENDITURE.....	3,724	7,280	12,031
II. AS PER CENT OF TOTAL EXPENDITURE			
A. Federal.....	53.4	59.2	49.8
B. Provincial.....	24.9	19.4	24.5
C. Municipal.....	21.7	21.4	25.7
TOTAL EXPENDITURE.....	100.0	100.0	100.0
III. AS PER CENT OF GROSS NATIONAL PRODUCT			
A. Federal.....	12.1	15.8	16.0
B. Provincial.....	5.7	5.2	7.9
C. Municipal.....	4.9	5.7	8.2
TOTAL EXPENDITURE.....	22.8	26.8	32.1

*Excludes intergovernmental transfers.

†Excludes transfers to provinces and municipalities.

‡Excludes transfers to municipalities.

^aExcludes transfers to provinces.

SOURCE: Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Appendix A, Table A-4.

PROJECTED GOVERNMENT SPENDING

In our recommendations relating to the financing of health care services we have suggested that additional programmes be financed from public funds.¹ In order to relate the cost of these programmes to total govern-

¹ See Chapter 2, Recommendation 1.

ment spending in the future we have prepared an estimate of future government spending which we now present. The basis for these projections is to be found in two studies prepared for us and here we present a brief summary of the trends.¹

Bearing in mind the limitations on any projection of spending, particularly government spending where the policies adopted by the next generation will influence future expenditures, we can still indicate what is likely to be the pattern of total government spending over the next decade and even over the next thirty years.

Projections relating to the growth of government spending in Canada have been made in the past and the assumption that has characterized these estimates has been that government spending would increase as national income rose but that as a proportion of national income, government spending would change but little.² To the present, these projections have not been realized and government expenditures have expanded more rapidly than income, although it may well be that things will have changed by the forecast date. In projecting future government spending we believe that it will continue to rise, and even rise more rapidly than income for some time in the future as both direct spending and transfer payments continue to grow.

The increased income that we project for the future will both permit and lead to an increased demand for more *direct* spending by governments as a consequence of the continued high level of demand for those goods and services that traditionally have been supplied by governments and for those which have been provided by governments in recent years. The projected growth of population in urban areas and expansion of such developments as research will generate an increased amount of spending for the employment of professional workers by government department and agencies; the construction and maintenance of more streets, roads and highways; the further expansion of elementary and secondary education, technical and vocational training; the continued development of municipal water and sewage disposal systems; increased government activities in the area of resource and industrial development, recreation areas, along with the expansion of publicly operated health facilities such as hospitals or public health clinics.

Recognizing that direct government expenditures will grow more rapidly than income, the question still remains how long will this trend continue?

Here we wish to point out that the trend projected is linked directly to our projection of total output and support the growth of demand needed

¹ Brown, T. M., *op. cit.*, and Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

² Royal Commission on Canada's Economic Prospects, *op. cit.*, Table 17-1; and Caves, Richard E., Holton, R. H., *The Canadian Economy, Prospect and Retrospect*, Harvard University Press, Cambridge, Mass., 1959, Chapter 9.

to maintain a relatively high level of employment and income. On the other hand they are consistent with the historical division of responsibilities between individuals and governments and among different levels of government in our federally constituted nation. In this sense we have made our projections on the assumption that those functions now being performed by various levels of governments will generally continue to be performed by these governments in the future and those functions now performed by individuals, business or non-profit corporations will continue to be performed by them in the future. This means, for example, that education at the elementary level will continue to be the responsibility of local authorities while education at the university level will be the responsibility of non-profit corporations and therefore classed predominantly as a non-government direct expenditure. The provision of hospital care in federal hospitals or provincial mental hospitals will be the responsibility of governments but the provision of hospital care in most general hospitals will be the responsibility of non-profit private corporations and therefore would be a non-government expenditure. The provision of funds for the finance of private spending may, in some cases, be the responsibility of public authorities; as is the case for general hospital care and some higher education. These expenditures by government are not direct outlays but transfer payments and are so described below.

But having said this it is still necessary to estimate at what point the growth rate of direct government spending will level off in the future. We have projected that defence spending will grow at a somewhat slower rate than in the post-war period since we have projected a constant proportion of GNE, four per cent. In view of the developments that may occur in the area of international relations, this may turn out to be too high and the trend rate of growth of spending on defence decline even further. If this were to be so the provision of health, educational and other facilities would be facilitated but in this area the future is uncertain. As can be seen from Table 19-1 we have projected that both public investment and public consumption will increase. Public investment as a percentage of GNP, is projected to rise from 4.8 per cent in 1961 to 5.7 per cent in 1966, to 6.1 per cent in 1971 and to reach 8.0 per cent by 1991. Public consumption, that is outlays on the services of police, firemen, teachers and other government employees along with other current expenditures, is projected to rise from 10.1 per cent in 1961 to 10.4 per cent in 1966, 11.0 per cent in 1971 and 13.1 per cent in 1991. By 1971, as shown in Table 19-7, direct government spending of all kinds, excluding defence, is projected to rise from 14.9 per cent of GNP to 17.1, an increase of 2.2 percentage points over ten years. By 1991, if the trends projected were to be maintained the increase would be 6.2 percentage points (3.2 per cent for investment spending and 3.0 per cent for other direct spending) and total direct spending would account for 21.1 per cent of GNP.

TABLE 19-7 PROJECTED GOVERNMENT EXPENDITURES ON GOODS AND SERVICES, BY CLASS OF EXPENDITURE, SELECTED YEARS, CANADA, 1961-1991
CONSTANT (1957) DOLLARS

Year	Government Consumption and Investment			Defence Spending			All Expenditures		
	Total Expenditures	Per Capita Expenditures	Percentage of GNP	Total Expenditures	Per Capita Expenditures	Percentage of GNP	Total Expenditures	Per Capita Expenditures	Percentage of GNP
	\$'000,000	\$		\$'000,000	\$		\$'000,000	\$	
				High Projection of GNP*					
1961†	5,156	283	14.9	1,452	80	4.2	6,608	362	19.1
1966.....	7,231	356	16.1	1,797	89	4.0	9,028	445	20.1
1971.....	9,600	425	17.1	2,246	99	4.0	11,846	524	21.1
1976.....	12,619	500	18.1	2,789	111	4.0	15,408	611	22.1
1981.....	16,435	582	19.1	3,442	122	4.0	19,877	704	23.1
1986.....	21,402	678	20.1	4,259	135	4.0	25,661	813	24.1
1991.....	27,977	797	21.1	5,304	151	4.0	33,281	948	25.1
				Low Projection of GNP†					
1961†	5,156	283	14.9	1,452	80	4.2	6,608	362	19.1
1966.....	6,984	344	16.1	1,735	85	4.0	8,719	430	20.1
1971.....	9,047	400	17.1	2,116	94	4.0	11,263	499	21.1
1976.....	11,607	460	18.1	2,565	102	4.0	14,172	562	22.1
1981.....	14,753	522	19.1	3,090	109	4.0	17,843	632	23.1
1986.....	18,748	594	20.1	3,731	118	4.0	22,479	713	24.1
1991.....	23,916	681	21.1	4,534	129	4.0	28,450	810	25.1

*Projected on the basis of a 4 per cent rate of unemployment and an average labour productivity of 2.75.

†Projected on the basis of a 5 per cent rate of unemployment and an average labour productivity of 2.25.

‡Dominion Bureau of Statistics, *National Accounts, Income and Expenditure 1962*, Ottawa: Queen's Printer, 1963, present revised data for 1961. Total expenditures, including defence spending, amounted to \$6,544 million or 18.7 per cent of real GNP.

SOURCE: Based on Table 19-1 and Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Table F-2.

Including defence spending, the projected increase in the period 1961-91 is from 19.1 per cent to 25.1 per cent.¹

The projection of direct government spending in *real* terms appears in Table 19-7 where projected expenditures are related to a GNP that grows at a rate consistent with a level of unemployment of four per cent and the growth of average labour productivity of 2.75, as well as to a GNP that grows at a lower trend rate consistent with a level of unemployment of five per cent and a rate of growth of average labour productivity of 2.25 per cent a year. With a high projection of GNP, government expenditures in real terms are projected to increase from \$6.6 billion in 1961 to \$9 billion in 1966, \$11.8 billion in 1971 and to reach \$33.3 billion by 1991. Excluding defence spending, the amounts are \$5.2 billion, \$7.2 billion, \$9.6 billion and \$28 billion respectively. Using the lower projection of GNP, estimated government spending is projected to rise to \$8.7 billion in 1966, \$11.3 billion in 1971, and to \$28.4 billion in 1991. Excluding defence spending, the figures are \$7 billion, \$9 billion and \$23.9 billion.

Recognizing that this is not the equivalent of the amount of taxes raised by governments since governments also collect funds to finance transfer payments, per capita government expenditures are projected to rise from \$362 per person in 1961 to \$524 in 1971 and to \$948 in 1991 in constant (1957) dollars; excluding defence spending the amount in 1961 would be \$283, in 1971 it would be \$425 and in 1991 it would be \$797. With the lower projection of GNP, per capita expenditures, including defence, are projected to rise to \$499 in 1971 and to \$810 in 1991. Excluding defence the amounts would be \$400 and \$681.

Projecting current trends in government direct spending indicates that, excluding defence spending, these outlays will rise by \$142 per person over the decade 1961-71. This is an increase of 50 per cent but it is not out of line with the trend rates of growth in the post-war period. During these years direct spending increased at an annual average rate of about 8 per cent compared with the rate of less than 6 per cent that is projected here. What will happen over the thirty years 1961-91 is much more uncertain. Although public investment must continue to increase to provide schools, roads, hospitals, airports and other social capital, it may well be that the expansion of private investment will be sufficiently high as to permit a slower rate of growth of public investment. Again a redefinition of public and private responsibilities might shift some spending from the public to the private sector although it must be emphasized that the expenditures will have to be made by one sector or the other if the rate of unemployment is to be kept down.

¹ See Table 19-7, footnote †. Revised data for 1962 indicate that real government expenditures as a percentage of GNP amounted to 18.7 per cent instead of 19.1 per cent as indicated above.

The rate of growth of government spending could turn down more rapidly in the future than is apparent from current trends. In any case, despite the sizeable increase in per capita government expenditures, the projections still allow for a substantial increase in real terms in private expenditures per person.¹ Under the high projection of GNP real per capita private expenditures are projected to rise from \$1,531 to \$2,829 while with the lower projection the estimated amount is \$2,418—three times the per capita expenditures, by governments. A high and rising real per capita income thus permits not only a sizeable expansion of government spending but also a rapid increase in private spending.

GOVERNMENT EXPENDITURES ON TRANSFER PAYMENTS AND SUBSIDIES

The projected trends in transfer payments are, like government expenditures on goods and services, based upon past trends taking into account such developments as the projected growth and age distribution of the population along with the additional outlays arising from our recommendations regarding new public health programmes.² Thus the size of transfer payments will depend on the cost of a children's dental care programme, expenditures for medical care and other programmes where individuals or non-profit organizations are paid for health services through some government or quasi-government agency; the number of people over 65 and eligible for old age assistance or old age pensions; the number of children receiving family allowances; the number of blind and disabled and the number of young people being educated in universities. In addition, the trend rate of growth in such payments will be influenced by the number of war veterans surviving; the number of unemployed in receipt of unemployment insurance or direct relief; the prosperity of the agricultural regions and other regional industries; the number of recipients of workmen's compensation and the size of government debt. Finally, the rate of growth will be influenced by the cost of providing hospital care in hospitals not operated by the federal or provincial governments; by the cost of providing university education; the policy of the community with respect to the level of benefits provided under the various income-maintenance programmes or old age security and the interest rate applicable to the public debt.

¹ Private expenditures per person include private consumption spending and private investment spending.

² Projected health expenditures financed by governments thus appear in two categories of projected total government spending; government expenditures and transfer payments.

Clearly with so many factors to be taken into account, particularly policy decisions, the projection of outlays by governments for transfer payments and subsidies, can only be tentative in nature. The current trends when projected into the future can indicate the "most likely" course of events over the decade 1961-71 but may not be a reliable guide to the level of transfer payments in 1991. This is particularly so since the amount of transfer payments has been rising rapidly in recent years. There seems to be no doubt, in view of the importance Canadians now attach to investment in human capital, that transfer payments to finance the purchase of health and education will continue to grow as will the participation of governments in the provision of prepaid retirement insurance. The point at which the growth of transfer payments will level off is still uncertain but we have projected a reduced rate of growth after 1976.

On the basis of current trends in spending and population growth, projected government expenditures on transfer payments and subsidies are set out in Table 19-8. With a high projection of GNP, total expenditures

TABLE 19-8 PROJECTED GOVERNMENT EXPENDITURES ON TRANSFER PAYMENTS AND SUBSIDIES, SELECTED YEARS, CANADA, 1961-1991, CONSTANT (1957) DOLLARS

Year	High Projection of GNP*			Low Projection of GNP†		
	Total Expenditures	Per Capita Expenditures	Percentage of GNP	Total Expenditures	Per Capita Expenditures	Percentage of GNP
	\$ '000,000	\$		\$ '000,000	\$	
1961‡	4,407	242	12.8	4,407	242	12.8
1966	6,243	319	13.9	6,246	308	14.4
1971	8,421	373	15.0	8,201	363	15.5
1976	10,946	448	15.7	10,388	412	16.2
1981	13,768	503	16.0	12,744	451	16.5
1986	17,143	560	16.1	15,484	491	16.6
1991	21,745	638	16.4	19,155	546	16.9

*Based on an average rate of unemployment of four per cent and an average labour productivity of 2.75.

†Based on an average rate of unemployment of five per cent and an average labour productivity of 2.25. The higher level of transfer payments compared to GNP is a consequence of the higher unemployment insurance benefits associated with the higher level of unemployment.

‡Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1962*, Ottawa: Queen's Printer, 1963, present revised data for 1961. On the basis of these data it is estimated that transfer payments and subsidies amounted to \$4,550 million or 13 per cent of GNP.

SOURCE: Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964. Appendix F, Tables F-1 and F-2.

measured in constant (1957) dollars are projected to rise from \$4.4 billion in 1961 to \$6.2 billion in 1966, \$8.4 billion in 1971 and to \$21.7 billion in 1991. With a low projection of GNP, expenditures are projected to reach \$6.2 billion in 1966, \$8.2 billion in 1971 and \$19.1 billion in 1991. Per capita transfer payments and subsidies are projected to rise from \$242 in 1961 to \$373 in 1971, an increase of about 35 per cent over the decade. By 1991, the projected amount is \$638. With a lower projection of GNP, the increase between 1961 and 1971 is \$121 and by 1991, projected per capita spending is \$546.

As a percentage of GNP, the main increase is projected to take place between 1961 and 1971 as this percentage rises from 12.8 per cent to 15 per cent.¹ By 1991, projected outlays account for 16.4 per cent of GNP. With a lower projection of GNP, expenditures are projected to account for 15.5 per cent of GNP by 1971 and to rise to 16.9 per cent by 1991.²

PROJECTED TOTAL GOVERNMENT EXPENDITURES

Total government spending in real terms—including defence spending and assuming a high projection of GNP—is estimated to rise from 31.9 per cent of GNP in 1961 to 34.0 per cent in 1966, 36.1 per cent in 1971 and to 41.5 per cent in 1991. In Table 19-9 total spending is projected to rise from \$11 billion in 1961 to \$15.3 billion in 1966, \$20.3 billion in 1971 and \$55 billion in 1991. In per person terms, the increase is from \$604 to \$764, \$909 and \$1,586 respectively. Assuming a lower projection of GNP, government expenditures are projected to rise to 34.5 per cent in 1966, 36.6 per cent in 1971 and 42 per cent in 1991. Total spending would rise to \$15 billion in 1966, \$19.5 billion in 1971 and \$47.6 billion in 1991, while per capita spending would be \$738 in 1966, \$862 in 1971 and \$1,356 in 1991.

The projected distribution of total government spending by level of government is illustrated in Table 19-10. In 1961 Federal Government expenditures were estimated to be the equivalent of 16.1 per cent of GNP; provincial and municipal government expenditures to be 15.8 per cent. The trends that we have projected imply a continued growth in those areas where expenditures are made by provincial and municipal government and little

¹ See Table 19-8, footnote ‡. Revised data for 1961 indicate that real government expenditures on transfer payments and subsidies amounted to \$4,550 million in that year or about 13 per cent of GNP.

² With higher rates of unemployment, unemployment insurance payments also rise and therefore transfer payments.

TABLE 19-9 PROJECTED TOTAL GOVERNMENT EXPENDITURES BY CATEGORY OF EXPENDITURES, SELECTED YEARS, CANADA, 1961-1991*, CONSTANT (1957) DOLLARS

Year	Including Defence Expenditures					
	High Projection of GNP			Low Projection of GNP		
	Total Expenditures	Per Capita Expenditures	Percentage of GNP	Total Expenditures	Per Capita Expenditures	Percentage of GNP
	\$ '000,000	\$		\$ '000,000	\$	
1961†.....	11,015	604	31.9	11,015	604	31.9
1966.....	15,271	764	34.0	14,965	738	34.5
1971.....	20,267	897	36.1	19,464	862	36.6
1976.....	26,354	1,059	37.8	24,560	974	38.3
1981.....	33,645	1,207	39.1	30,587	1,083	39.6
1986.....	42,804	1,373	40.2	37,963	1,204	40.7
1991.....	55,026	1,586	41.5	47,605	1,356	42.0
Year	Excluding Defence Expenditures					
	Total Expenditures	Per Capita Expenditures	Percentage of GNP	Total Expenditures	Per Capita Expenditures	Percentage of GNP
	\$ '000,000	\$		\$ '000,000	\$	
1961†.....	9,563	524	27.7	9,563	524	27.7
1966.....	13,474	675	30.0	13,230	653	30.5
1971.....	18,021	798	32.1	17,348	763	32.6
1976.....	23,565	948	33.8	21,995	872	34.3
1981.....	30,203	1,185	35.1	27,497	974	35.6
1986.....	38,545	1,238	36.2	34,232	1,086	36.7
1991.....	49,722	1,435	37.5	43,071	1,227	38.0

*Includes expenditures on goods and services and transfer payments, and subsidies. Excludes transfers between levels of governments.

†Expenditures based on the revised data for 1961, as shown in Dominion Bureau of Statistics, *National Accounts, Income and Expenditure, 1962*, Ottawa: Queen's Printer, 1963.

SOURCE: Based on Tables 19-7 and 19-8.

change in the rate of growth of federal spending.¹ Thus assuming a high rate of growth of GNP, by 1971 the projected level of provincial and municipal government spending as a percentage of GNP amounts to 20.3 per cent, while the projected level of spending by the Federal Government is 15.8 per cent. The former increases by 4.5 percentage points, the latter declines by 0.3 percentage points. By 1991, the Federal Government is projected to account for only 16.6 per cent of government spending, while provincial and municipal governments together account for almost 25 per cent. A slower rate of economic growth would increase slightly projected spending at all

¹ This does not mean that the revenue requirements of different levels of government will not change since transfers of revenue take place between governments. See Chapter 21.

TABLE 19-10 PROJECTED DISTRIBUTION OF TOTAL GOVERNMENT EXPENDITURES, BY LEVEL OF GOVERNMENT, CANADA, SELECTED YEARS, 1961-1991*
(percentages of GNP)

Year	Federal Government†	Provincial and Municipal Governments	All Governments†	Federal Government‡	Provincial and Municipal Governments‡	All Governments‡
1961.....	16.1	15.8	31.9	16.1	15.8	31.9
1966.....	15.6	18.4	34.0	15.9	18.6	34.5
1971.....	15.8	20.3	36.1	16.1	20.5	36.6
1976.....	16.1	21.7	37.8	16.4	21.9	38.3
1981.....	16.2	22.9	39.1	16.5	23.1	39.6
1986.....	16.4	23.8	40.2	16.7	24.0	40.7
1991.....	16.6	24.9	41.5	16.9	25.1	42.0

*It should be noted that expenditures by level of government do not necessarily indicate that the particular level of government raised the revenues to finance such expenditures since transfers of revenue between level of governments take place.

†Based on a high projection of GNP.

‡Based on a low projection of GNP.

Source: Table 19-9 and Hanson, E. J., *Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964. Appendix F, Table F-2.

levels of government because of the increased amount of unemployment insurance and other welfare payments associated with a lower rate of growth of output.

CONCLUSION

We have examined the general trends in government spending and we have recognized that changes in the economic, political and social structure of Canada, as well as for most other nations, have been associated with, and continue to be associated with increasing government expenditures. These trends we believe will continue into the future. Quite apart from any other factors that might tend to increase the relative importance of government programmes, the projected growth of population in Canada suggests that the public sector will account for a somewhat larger share of GNP in the future. The rapid rate of growth of population in those areas that provide a high level of educational and health services also support this belief. Schools, roads, highways, hospitals have to be provided by some organizations. The increasing complexity of public programmes, the advanced technical and

scientific research associated with government activities all seem to indicate continued rising expenditure trends in this sector as will the tendency to substitute public health insurance programmes for private health insurance.¹

It is sometimes said that the public sector is a burden upon the whole economy. It is undoubtedly true that given full employment of resources, the provision of public services utilizes factors of production which would otherwise be used to produce private goods. If there is unemployment, however, expansion of the public sector does not imply a reduction of output of private goods. Instead it will produce an increase in the total Gross National Product until "full employment" is reached. The resulting pattern of output then comes to consist of the same level of output of private goods but a higher level of collective goods and services than before. There are complications in that the new pattern of resource use induces changes in private consumption and investment, depending on the methods of financing used. But the basic proposition remains: if there are unused resources output will be increased if the government puts them to work, and thus there is no burden on the economy. Even in a situation where there are very little unused resources in the economy, that is where the level of unemployment might be reduced say to two per cent, public spending can continue to increase absolutely, since with the growth of total output, both private and public output can increase over time. Indeed, certain public services are required to permit a high level of over-all economic growth; an appropriate balance between private and public goods is a requirement of economic progress.

The expansion of government expenditures indicated here is a concomitant of the process of economic development and its attendant urbanization. Government in a predominantly agricultural or extractive type of economy need not be large; it can be simple and small. When people come to live under high-density conditions and in a highly specialized technologically advanced economy the degree of interdependence increases materially. The result is the requirement for a large and complex variety of government services. The high and rising incomes which such a society produces makes the provision of these services possible.

We do not say that governments should spend, or will necessarily spend, the proportion of GNP that we have projected. It may well be that public preferences will be such as to reduce both direct government spending and transfer payments below the level projected here for 1991. But no matter how it is done, increased expenditures on health, education, roads, public utilities, etc., will have to be made and to describe many of these government expenditures as welfare payments is to invite an argument over

¹ See Robertson, Ronald and Brydon, Marion H., "Government Expenditures—A Look at 1965"—*Canadian Tax Journal*, Vol. IX, No. 6, November-December, 1961, pp. 418, ff., where it is estimated that total government expenditures in 1965 could range between 32 per cent and 36 per cent of GNP.

semantics. What we do say is that increasing outlays by governments in the area of health services is not an isolated phenomenon, that it is part of a general tendency to expand public services and that it can favourably influence the course of the economy and improve the level of the individual's well-being.

We have outlined in this chapter the course of economic expansion we anticipate in Canada for the period 1961 to 1991. Over these 30 years, we expect the following increases:

1. Population, from 18.2 million to 35.1 million, up by 93 per cent.
2. Labour force, from 6.5 million to 13.1 million, up by 101 per cent.
3. Employment, from 6.1 million to 12.6 million, up by 108 per cent.
4. Gross National Product in real terms,¹ from \$34.5 billion to a range between \$113 billion² and \$133 billion³, or up between 228 per cent and 284 per cent.

Over the same period we expect the following reductions:

1. The average number of hours worked per week, from 41.5 to 33.91, down by 18 per cent.
2. The ratio of persons unemployed to labour force, from 7.2 per cent down to between 4 and 5 per cent.

We believe that the expansion of the Canadian economy which we envisage over the next 30 years is fully realizable with competent private and public management of our affairs and the determined pursuit of sensible and practical economic policies supported by all the major groups in our country.

We conclude that Canada's future economic growth is of such an order, even under conservative assumptions, that this country can implement the health care programme recommended in this Report as soon as appropriate personnel, financial and organizational arrangements have been worked out. The expenditures involved in an expanded health care programme over the next 30 years are set out in Chapter 20 and methods of financing in Chapter 21.

¹ Valued in 1957 dollars.

² Based on the assumption of 5 per cent of the labour force unemployed and an annual average increase in productivity of 2.25 per cent.

³ Based on the assumption of 4 per cent of the labour force unemployed and an annual average increase in productivity of 2.75 per cent.

Projected Health Expenditure, 1961-1991

In view of the projected long-term growth of the Canadian population and per capita incomes there can be no doubt that the total amount Canadians will spend on health will continue to increase in the future as it has done in the past. To obtain an indication of what Canadians might be spending on health care over the next three decades, we present in this chapter projections of health expenditures based on an extrapolation of the trends in health expenditures that have developed in the past and that have been outlined in Chapter 11, combined with a judgment about future trends.¹

We have pointed out the limitations of such projections in Chapter 19. Here we wish to emphasize that our estimates of future spending, while they take into account the consequences of an expansion of public programmes, assume that there will be no sudden great changes in the demand for health services; that scientific advances in medicine, while continuing, will contribute to a gradual extension of the life span but not produce a drastic change and major catastrophies will not occur which would take lives by the millions. Such drastic changes would alter the basis for the projection presented here. Providing such events do not take place, the trend lines that we have projected into the future—and adjusted where we have felt the trend will slowly change—can provide a basis for an examination of policy that itself must be reviewed and revised periodically as the future unfolds itself.

We require two estimates of future health expenditures. The first is necessary to give us an indication of the health resources and health capital required to provide the health services which Canadians may demand over the period 1961-1991 assuming proposals for changes in the health care programmes such as we recommend are accepted; and what it would cost in real terms to provide these services. This estimate can then be

¹ It bears emphasis that these projections are an indication of what Canadians might be spending on health care and they do not represent an attempt to forecast what Canadians will be spending on health care. The latter would be a forecast and would require a considerable amount of additional data, not available at present, including information on the relationship between health expenditures and such socio-economic variables as family size, family income, age and occupation of family head, urban and rural residence, level of education and extent of health insurance coverage.

related to the productive capability of the Canadian economy and we arrive at the proportion of Gross National Expenditure devoted to health services. We require this ratio, or a range of such ratios, to examine the relative importance and the economic implications of growing health services in an expanding Canadian economy.

The second estimate required is an indication of what it actually would cost Canadians in current dollar terms to pay for health services over the decade 1961-1971. Here we want to make the distinction between what it would cost Canadians to pay for health services assuming proposals for changes in the health care programme such as we recommend are accepted and assuming that these changes are not made. This will give us an indication of the difference in cost between a programme of comprehensive health services and health expenditures that will be made by Canadians in any event on the basis of institutional arrangements as they now exist.

We present, therefore, two projections of health expenditures. The first relates to the period 1961-1991 and estimates the level of output of health services and health capital, health expenditures measured in *constant* (1957) dollars, for a number of years within this period. The second projection relates to the period 1961-1971 and estimates the amount of money that actually may be spent, health expenditures in *current* dollars, in the years 1966 and 1971.

PROJECTION OF OUTPUT OF HEALTH SERVICES AND HEALTH CAPITAL, 1961-1991

In projecting the possible output of health services and health capital, the method adopted has been to apply the population projection described in Chapter 4 to an estimate of per capita expenditures in constant (1957) dollars over the period 1961 to 1991.

Since the population of Canada is expected to rise from 18.2 million in 1961 to 35.1 million in 1991, the level of total real spending, assuming no change in the price level of health services and health capital, will depend on the projected growth of per capita real spending and it is to this that we now turn our attention.

Per Capita Spending on Health Services in Constant (1957) Dollars

The trend rate of growth of projected per capita real spending will depend on what is considered to be a health expenditure. Here, as in Chapter 11, we have included expenditures on all personal health services, prescribed drugs, general and public health services, and the construction

of hospitals, medical, dental and nursing schools along with other public health capital. Included also are grants-in-aid of health education and health research but expenditures on non-prescribed drugs and pharmaceuticals are excluded.

We have examined the historical trend rate of growth of per capita real spending on most of these items in Chapter 11 and it is on these trend rates that our projections are based. For the items health education, health research and medical and dental schools, the historical data were insufficient to calculate a trend rate of growth in spending. To some extent these expenditures have been included in projected public health expenditures, while the total outlay in 1961 not included is unlikely to have exceeded \$20 million. We have assumed therefore that our projected expenditures for personal health services, public health and health capital are sufficiently large to include the projected growth of expenditures on health research and education along with the construction of medical and dental schools implicit in our recommendations.¹

In examining the past rate of growth of per capita real spending we have pointed out that there are marked differences in the trend rates when we compare the period 1926-1961 with the post-war period 1945-1961. As can be seen from Tables 11-18 and 11-19, the average annual increase in per capita real spending for the period 1926-1961 was 2.2 per cent a year while for the post-war period it amounted to 3.9 per cent.² Which of these trend rates will be characteristic of the future it is not easy to say. But our examination of the historical evidence leads us to believe that the trend rate of the future will lie somewhere between these two extremes and our "most likely" projection of the trend rate of growth for the period 1961-1991 is 3.0 per cent. We have, however, estimated what total health expenditures would be assuming a high and low projection of per capita real spending and the results appear in Table 20-1.

While the Canadian consumer of health services has something in common with the consumer of a generation ago, in recent years many factors have combined to produce a rapid increase in the level of per capita spending. These factors have been described in detail in Chapter 11, particularly the impact of rising real disposable income that permitted increased spending on health without reducing spending on other goods and services, and the scientific and technical revolution in the health industry along with the growth of public and private hospital and medical insurance

¹ See footnote 1, Chapter 11, p. 455. The projected expenditures in constant (1957) dollars for 1971, as a proportion of GNE are within 0.1 percentage points of projected expenditures in current dollars, including research and education. This is almost the same relationship that existed in 1961.

² For the period 1926-1961, expenditures include only personal health services. For the period 1945-1961 they include expenditures on prescribed drugs, government health services and hospital capital.

TABLE 20-1 ESTIMATED EXPENDITURES ON HEALTH SERVICES AND HEALTH CAPITAL ASSUMING DIFFERENT TREND RATES OF GROWTH OF SPENDING, CANADA, SELECTED YEARS, 1957-1991*
Constant (1957) Dollars

Year	Population	Low Projection**		High Projection†		"Most Likely" Projection††	
		Expenditures		Expenditures		Expenditures	
		Per Capita	Total	Per Capita	Total	Per Capita	Total
	'000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000
1957 ^a	16,610	81.40	1,352.1	81.40	1,352.1	81.40	1,352.1
1961 ^a	18,238	99.40	1,812.9	99.40	1,812.9	99.40	1,812.9
1966 ^b	20,296	110.80	2,248.8	120.10	2,437.5	120.90	2,453.8
1971 ^b	22,590	123.70	2,794.4	145.30	3,282.3	150.05	3,389.6
1976 ^b	25,234	138.00	3,482.3	175.70	4,433.6	178.88	4,513.9
1981 ^b	28,247	154.00	4,350.0	212.50	6,002.5	202.00	5,705.9
1986 ^b	31,546	169.70	5,353.4	256.90	8,104.2	223.00	7,034.8
1991 ^b	35,107	187.25	6,573.8	310.70	10,907.7	240.05	8,427.4

*Includes expenditures on personal health services, prescribed drugs, general and public health services, construction of hospitals, medical, dental and nursing schools, and other public health capital and health research.

**Based on the trend rate of growth of estimated real per capita consumption, 1926-1961; 2.2 per cent a year.

†Based on the trend rate of growth of estimated real per capita consumption in the years 1945-1961; 3.9 per cent.

††Based on a "judgment" of the most likely trend rate of growth of real per capita consumption over the years 1961-1991 assuming the expansion of public programmes. The equivalent of a projected trend rate of growth of 3.1 per cent.

^aExcludes expenditures on construction of medical and dental schools and some health research and education. For the effect of these exclusions on projected expenditures see p. 791 and p. 795.

^bProjected.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

programmes that led consumers to spend a larger share of their growing real income on health services, rather than some other commodity. The existence of a large number of people in the community who did not, in the past, obtain the quantity and variety of health services that they felt they needed has meant that as incomes have risen need was translated into demand. Thus in the period before 1945 real per capita consumption of personal health services rose at a trend rate of less than one per cent a year compared to 3.9 per cent in the post-war period. Moreover, we have seen that it has been possible to expand the supply of health services to meet the growing needs of Canadians and to permit Canadians to achieve not only the level of consumption that they appear to have attained before the great depression, but greatly to surpass it; and this despite a doubling of the population.

In the light of these facts to use the long-term trend of the period 1926-1961, including as it does the period of depression and the dislocation of a major war, as a basis for projections would tend to underestimate the future trend rate of growth of health expenditures.

An alternative projection, based upon the post-war trend in expenditures runs the opposite risk of significantly over-estimating the trend rate of growth of future spending. Again, as we have examined the post-war trend in spending, we have concluded that part of the rapid increase has been the consequence of the re-establishment of a pattern of spending that existed before 1929: what we have described as a "catching-up" process that has operated in the area of services generally, and health services in particular. In such circumstances a high current level of spending may merely represent a temporary deviation from the long-term trend, not an indication that the long-term trend has permanently moved to a much higher level.

Our judgment in this matter has been influenced by what has happened in the post-war period. The evidence suggests that the trend rate of growth of health spending might have slowed by the late nineteen fifties, on the completion of the "catching-up" process, if it had not been for the impetus to demand generated at that time by the rapid development of public and private hospital and medical care insurance programmes, the substantial increase in the provision of mental hospital care along with the more general growth of social security payments. As these programmes came into operation, Canadians with low incomes found it possible to obtain the additional health services they needed. Many other Canadians were able to obtain the health services they desired in the knowledge that the risks of a very high outlay could be minimized through health insurance. The development of subsidized health care programmes, either directly as in the case of hospital care, or indirectly through a variety of other measures, has also influenced the rate of growth of consumption. Such programmes have shifted

up the trend rate of growth of spending in the short run. They have led to the concentration of the long-term growth of consumption into a comparatively short period of time. Without these programmes health expenditures would have increased at a slower rate taking a longer period to rise since in part the increase depended upon the long-term growth of real personal income.

We do not, however, envisage that this high rate of growth of per capita real spending will persist indefinitely into the future. Without technical innovations and major scientific discoveries that create demand for new and hitherto unknown health services, there is a limit to the amount of health services that Canadians are likely to consume even if there were no financial barriers to obtain all health care required. A growth rate of 5.1 per cent a year, that characterized the period 1957-1961, and which influenced substantially the post-war trend, is unlikely to persist for very long periods since it would generate per capita expenditures on health which would be out of line with the long-term growth of per capita income and output, as well as the desires of consumers to obtain other goods and services and to spend their leisure time in other places than physicians' offices or hospital wards. As we emphasized earlier Engel's law applies to health services as much as it does to basic foods.¹

In view of our recommendations relating to the expansion of public programmes for health care, and in the light of the more detailed projections presented later in this chapter for the period 1961-1971, we have projected the trend rate of growth of per capita real expenditures on health services, and health capital will remain at a high level for the next decade but the rate of growth will gradually decline until by 1991 the average annual increase will amount to 1.5 per cent a year. Table 20-2 indicates the rates of growth projected for each quinquennium.

Although the public programmes we recommend would not become operative on any substantial scale before the second half of the decade, the rate of growth of per capita real expenditures is projected to remain at a relatively high level in this period since the demand for hospital care will continue to grow in those provinces that have only recently entered the Hospital Insurance Programme. With the elimination of some of the back-log of hospital care, consequent on the national implementation of the Hospital Insurance Programme and the spread of medical and other categories of private health insurance to many of the groups that can be most readily insured, it is believed, however, that the trend rate of the growth in the period 1961-1966 will be somewhat lower than in 1957-1961, and is projected at 4 per cent. The introduction of public medical, dental and other programmes, such as the expansion of health research and grants-in-aid of education and the construction of new medical and dental schools as recommended by the Commission,

¹ See Chapter 11.

TABLE 20-2 ESTIMATED PER CAPITA EXPENDITURES ON HEALTH SERVICES AND HEALTH CAPITAL AND PERCENTAGES OF PER CAPITA GNE(GNP), ASSUMING DIFFERENT TREND RATES OF GROWTH OF GNE, CANADA, SELECTED YEARS, 1957-1991

Constant (1957) Dollars

Year	Per Capita GNE		Per Capita Spending on Health Care "Most Likely" Projection	Per cent of Per Capita GNE Spent on Health Services	
	Projected Growth of GNE	Projected Low Growth of GNE		Projected Growth of GNE	Projected Low Growth of GNE
	\$	\$	\$		
1957	1,921	1,921	81.40	4.24	4.24
1961*	1,920	1,920	99.40	5.18	5.18
1966	2,213	2,137	120.90	5.46	5.66
1971	2,485	2,342	150.05	6.04	6.41
1976	2,763	2,541	178.88	6.47	7.04
1981	3,046	2,734	202.00	6.63	7.39
1986	3,375	2,957	223.00	6.61	7.54
1991	3,777	3,229	240.05	6.35	7.43

*Revised per capita GNP, see footnote b, Table 19-2.

SOURCE: Based on Tables 19-2 and 20-1.

would raise the trend rate of growth once again and a 4.5 per cent rate of increase is projected for the period 1966 to 1971.

Limitations on the supply of professional personnel likely would prevent the complete elimination of the back-log of demand for all health services before 1971 and, as a consequence, the rate of growth for the quinquennium 1971-1976 is projected still to remain at the relatively high level of 3.5 per cent. For the remaining quinquennia it is projected that the trend rate of growth will be 2.5, 2.0 and 1.5 per cent respectively.

The results of these projections are set out in Table 20-1, which presents the per capita expenditures on health services and health capital in constant (1957) dollars; that is in *real* terms. The "most likely" projection implies that within a period of 30 years, each Canadian, on the average, excluding price change, will be spending about \$240 compared with about \$99 in 1961 or an increase of 2.4 times by 1991. This compares with a doubling of real expenditures in the 17-year period 1945-1961. This projection includes expenditures on health capital and also, as indicated earlier, allows for the expansion of health research and education in these years, but in general it can be said that the average Canadian will be able to obtain 2.4 times as much hospital care, medical care, dental services, prescription drugs, government and other health services as he did in 1961, though the

TABLE 20-3 ESTIMATED CONTRIBUTIONS TO THE GROWTH RATE OF REAL EXPENDITURES ON HEALTH SERVICES AND HEALTH CAPITAL, CANADA, SELECTED PERIODS, 1926-1991*

(percentages)

Period	Rate of Population Change	Rate of Change of Real Per Capita Spending	Growth Rate of Total Real Expenditures
1957-1961**	2.4	5.1	7.5
1961-1966†	2.2	4.0	6.3
1966-1971†	2.2	4.5	6.8
1971-1976†	2.2	3.5	5.8
1976-1981†	2.2	2.5	4.8
1981-1986†	2.2	2.0	4.2
1986-1991†	2.2	1.5	3.7
1926-1961††	1.9	2.3	3.7
1945-1961 ^a	2.6	3.9	6.6
1957-1991†	2.2	3.3	5.6
1961-1991	2.2	3.0	5.3

*Projection for 1961-1991 is "most likely" projection of expenditures on health services and capital indicated in Table 20-1 assuming an expansion of public programmes.

**Excludes some expenditures on health research and education along with construction of medical schools and dental schools.

†Projected.

††Includes only expenditures on personal health services. See Table 11-18.

^aSee Table 11-19.

SOURCE: Based on Tables 11-18, 11-19, and 20-1.

composition of his consumption may be different and no doubt will include hospital, medical, and dental services for many illnesses not now generally susceptible to treatment, as well as health services which scientific advances have not yet brought into being. The very magnitude of this increase indicates that to choose the high projection of health spending, that would generate an increase to \$310 by 1991, as the most likely path of the future, would be to over-estimate the demand for health care. Indeed, in view of the high level of consumption of hospital services at the present time, and the availability of dental and medical care to many groups and in many areas, it may be that the trend rate of growth of real per capita expenditures may grow even less rapidly after 1971 thus slowing down even further the rate at which real health expenditures are projected to grow.

The low projection of per capita spending which extrapolates the trend rate of growth of per capita spending during the period 1926-1961, would generate a level of spending in 1991 of \$187 per capita, a rate of

increase which would lead to expenditures barely doubling over the 30-year period. In view of the back-log of current demand, to project such an increase might be to under-estimate future demand.

The differing trend rates of growth can be seen most clearly from Figure 20-A. Here the "mostly likely" projection rises more rapidly than either the low or the high projection up to the mid-seventies. After that date the rate of growth of spending slows down, the trend rate of growth is bent downward, so that while per capita real expenditures continue to grow, they grow somewhat less rapidly than in the high projection, though they still remain higher than with the low projection.

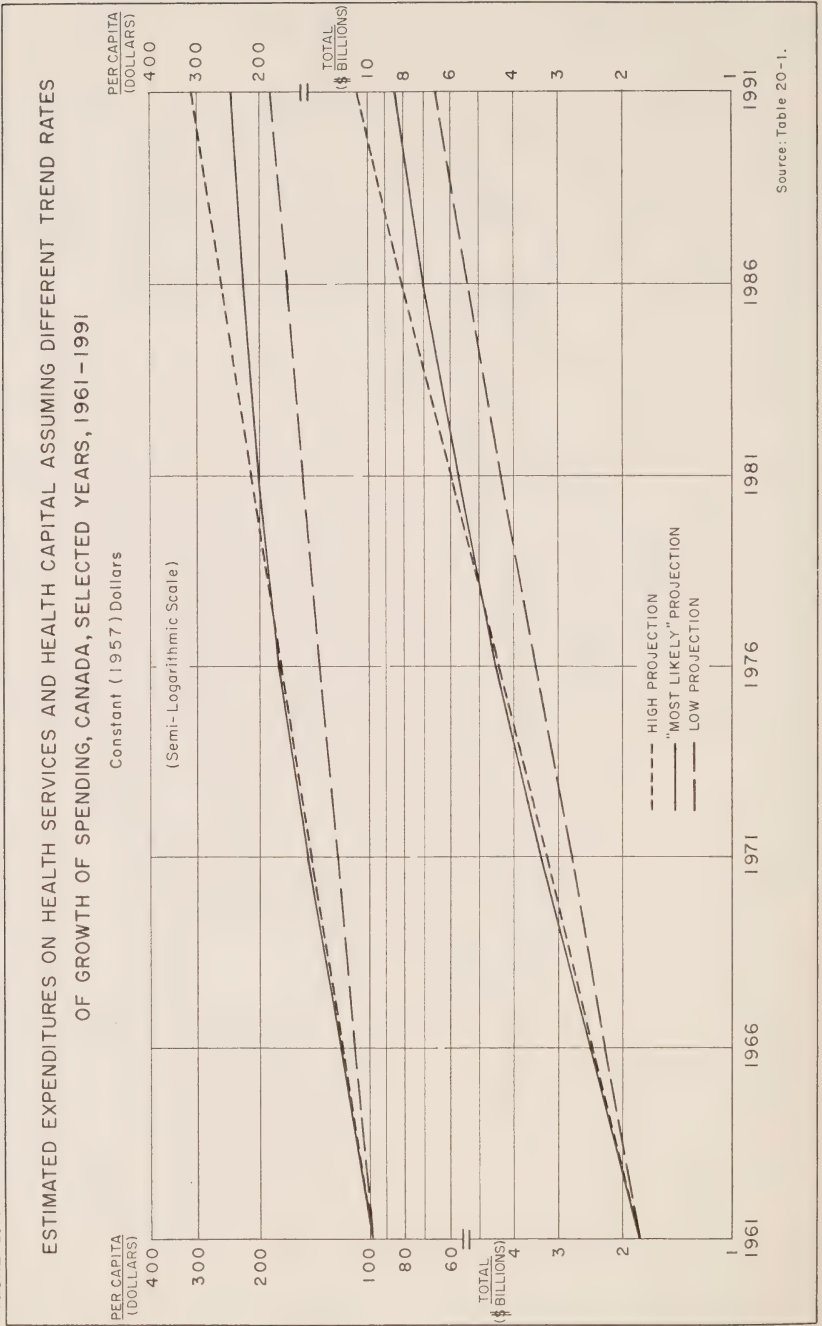
Total Real Spending on Health Services and Health Capital, in Constant (1957) Dollars

Having presented our projections of the population and the estimates of real per capita expenditures the projected total expenditures on health services and health capital is arrived at by multiplying the projected population for any one year by the projected real per capita spending for that year. Table 20-1 presents the estimates of total real spending for the years between 1961 and 1991 based on three different projections. By 1966, the "most likely" projection indicates that real expenditures will amount to \$2,454 million compared with \$2,438 million under the high projection and \$2,249 million under the low projection. In 1971, estimated expenditures under the "most likely" projection amount to \$3,390 million compared with \$3,282 million under the high projection and \$2,794 million under the low projection. By 1991, expenditures under the "most likely" projection are estimated to be \$8,427 million compared to \$10,908 million under the high projection and \$6,574 million under the low projection.

Health Expenditures as a Percentage of GNE

The implication of the "most likely" projection of real per capita consumption in terms of the proportion of total output or expenditures allocated to health services and capital is presented in Table 20-2. The estimates are related to the two projections of Gross National Expenditure (Gross National Product) developed in Chapter 19, a projection based upon an assumption of four per cent unemployment rate and a trend rate of growth of average labour productivity of 2.75 per cent and a lower projection based upon a five per cent level of unemployment and a projected trend rate of growth of average labour productivity of 2.25 per cent a year. Assuming that GNE grows at the higher trend rate and health expenditures at the rate

FIGURE - 20A



set out in the "most likely" projection, the percentage of GNE allocated to health is projected to rise from 5.2 per cent in 1961 to 6.3 per cent in 1991. In the interim periods the percentage projected for 1966 is 5.5 and for 1971, 6 per cent; a peak of 6.6 per cent is projected for 1981 but thereafter, as real income grows more rapidly than real health expenditures, the proportion devoted to health slowly declines.

Since health expenditures have been projected separately, with a lower projection of GNE, the proportion allocated to health naturally is higher, reaching a peak of 7.5 per cent in 1986 and slowly declining after this date. In all likelihood if GNE did grow at a slower rate, the trend rate of spending on health services also would be lower and our belief is that health expenditures would not rise above seven per cent even under this assumption, though the level of per capita consumption would be lower.

The financial implications of these projections, based as they are on the implementation of the programmes that we have recommended, can be summarized as follows:

Year	Per Capita Expenditures	Total Expenditures	Percentage of GNE
	constant (1957) dollars	millions of constant (1957) dollars	
1961.....	99.40	1,813	5.2-5.2
1971.....	150.05	3,390	6.0-6.4
1991.....	240.05	8,427	6.3-7.4

In terms of total expenditures, the projection indicates that by 1971, total outlays in constant (1957) dollars will have increased by 87 per cent from \$1,813 to \$3,390 million, while over the thirty-year period 1961-1991 they are projected to rise fivefold to \$8,427 million. In per capita terms, the increase between 1961 and 1971 is somewhat less, about 50 per cent; while between 1961 and 1991 the increase is considerably less, only 2.5 times. In terms of the proportion of GNE spent on health, the projected increase between 1961 and 1971, based on the higher rate of growth of GNE, is the equivalent of a percentage increase of about 17 per cent, while between 1961 and 1991 it is the equivalent of a percentage increase of the order of 25 per cent. Based on the lower rate of growth of GNE, the increased proportion of GNE allocated to health would be greater but with a slower rate of growth of income it is likely that the proportion allocated to health would also grow less rapidly.

CURRENT DOLLAR PROJECTIONS OF SPENDING ON HEALTH SERVICES AND HEALTH CAPITAL, 1966 AND 1971

A projection of the level of spending in current dollars is subject to the possibility of error because of the need to allow for variations in the prices of such services. We have still thought it desirable to develop a projection of health spending in current dollars for the years 1966 and 1971 to obtain an indication of the order of magnitude of Canadian spending on health services in terms of prices likely to prevail at that time. In so doing, our approach has been to project first the current dollar expenditures on various health services and health capital, assuming that there is no change from the level and content of public programmes as they existed in 1962 for the provision of health services and secondly assuming the expansion of public programmes for the provision of health services such as we recommend.

In general, for the major categories of spending such as physicians' services, dentists' services and hospital care our projections are related to the projected *supply* of health personnel and hospital capital but for other categories of spending it has been possible only to project past trends in spending, modifying such trends in the light of our judgment of the developing situation. In the case of spending on health research, education and medical, dental and certain other health capital, as we have indicated above, our projection has been based essentially on our judgment of the future situation since historical trends provide little guide as to what the future may bring.

Given the data available we have not presented a range of alternative levels of spending and in that sense our projections are what we believe to be the "most likely" level of spending. We do not, however, state that the growth of spending which we have projected for individual health services in specific years will, in each and every case, be achieved. It may well be that medical expenditures will fall somewhat above our projected figures while hospital expenditures could move in the opposite direction. In this case, our projected total expenditures could be close to that actually achieved but the composition of spending could be somewhat different. In short, expenditures could diverge somewhat from the projected figures for individual items but it is unlikely that the total level of spending would diverge substantially from the projected figures if current trends continue.¹

¹ Any such divergence is likely to result in a lower level of spending. See the discussion of the projected costs of hospital care p. 838.

Projected Total Health Expenditures

The projected total expenditures on health services, capital and other health items are presented in Table 20-4. It will be noted that no estimate has been presented for expenditures on health research and grants-in-aid of education assuming existing public programmes. Again this deficiency arises from the limited data available to project any trend and from the significant policy changes that have been made in this area in recent years. In view of the amounts involved such omissions do not seriously limit the comparability of projected expenditures with and without expanded public health programmes. But it is necessary always to keep in mind that the financial implications of our recommendations tend to overstate the additional costs of health care if these latter costs include research and grants-in-aid of education. A similar situation arises with our projection of health capital. Since the data available for projecting expenditures on medical and dental school construction are limited, our projections assume that construction in these two areas, except for capital outlays for a Children's Dental Programme, would be the same whether we assume existing public programmes or an expansion of public programmes. This assumption probably overstates the projected level of expenditures with existing public programmes so that its effect is to cancel out any under-estimate arising from the exclusion of research and education expenditures mentioned above.

On the basis of established public programmes, but excluding health research and grants-in-aid of education, expenditures on health care are projected to rise from \$2,007 million in 1961 to \$2,873 million in 1966 and to \$4,015 million in 1971, all measured in current dollars. Assuming the expansion of public programmes as outlined later in this chapter, expenditures are projected to rise to nearly \$2,994 million in 1966 and to \$4,407 million in 1971, involving in the latter year an increase of about \$392 million as a consequence of expanded public programmes. If research and grants-in-aid of education are included in these amounts, total expenditures are projected to rise to \$3,051 million in 1966 and \$4,481 million in 1971, and the increase in spending as a consequence of expanded public programmes in 1971 amounts to \$466 million.

The trend rate of growth implicit in these projections is somewhat lower than has been experienced in the post-war period, but still above the long-run trend of 1926-1961. In the post-war period, as we have indicated in Table 11-19, the trend rate of growth declined from 16.3 per cent a year in the quinquennium 1945-1949, to 10.3 per cent a year in the quinquennium 1957-1961. If no expansion of public programmes takes place, as shown in Table 20-5, we have projected expenditures to grow at a somewhat slower rate; 7.4 per cent a year for the period 1961-1966, and 6.9 per cent for the period 1966-1971. Assuming an expansion of public

TABLE 20-4 ESTIMATED EXPENDITURES ON HEALTH SERVICES AND HEALTH CAPITAL, ASSUMING EXISTING PUBLIC PROGRAMMES AND WITH EXPANDED PUBLIC PROGRAMMES AND PERCENTAGE OF GNE, CANADA, SELECTED YEARS, 1961-1971

(current dollars)

Year	Operating Costs of Health Services*				Expenditures on Public Health**		Capital Expenditures†		Total Costs of Health Services and Capital			
	Percentage of GNE				Total		Per Capita		Total	Per Capita	Projected Growth of GNE	Projected Low Growth of GNE
	Total	Per Capita	Projected Growth of GNE	Projected Low Growth of GNE								
					\$'000,000	\$	\$'000,000	\$	\$'000,000	\$		
					Assuming Existing Public Programmes							
1961	1,723.9	94.50	4.6	4.6	105.0	5.76	177.8††	9.75	2,006.7	110.01	5.4	5.4
1963 ^a	2,010.1	105.91	—	—	120.0	6.32	213.0	11.22	2,343.1	123.45	—	—
1966 ^b	2,561.7	126.18	4.8	5.0	150.0	7.39	161.4	7.95	2,873.1	141.52	5.4	5.6
1971 ^b	3,617.1	160.11	4.9	5.2	190.0	8.41	207.8	9.20	4,014.9	177.72	5.5	5.8
					Assuming Expansion of Existing Public Programmes							
1966 ^b	2,676.1	131.82	5.0	5.2	150.0	7.39	167.8	8.27	2,993.9	147.48	5.6	5.8
1971 ^b	4,006.9	177.39	5.4	5.8	190.0	8.41	210.3	9.31	4,407.2	195.11	6.0	6.3

Year	Expenditures on Research		Grants-In-Aid of Education		Grand Total		
					Percentage of GNE		
	Total	Per Capita	Total	Per Capita	Total	Per Capita	Projected Low Growth of GNE
	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	
1961	12.0	0.66	—	— ^a	—	—	—
1963 ^a	17.0	0.90	—	—	—	—	—
1966 ^b	—	—	—	—	—	—	—
1971 ^b	—	—	—	—	—	—	—
Assuming Existing Public Programmes							
1966 ^b	32.0	1.58	24.7	1.22	3,050.6	150.28	5.7
1971 ^b	48.0	2.12	26.0	1.15	4,481.3	198.38	6.1
Assuming Expansion of Existing Public Programmes							
1966 ^b	32.0	1.58	24.7	1.22	3,050.6	150.28	5.9
1971 ^b	48.0	2.12	26.0	1.15	4,481.3	198.38	6.4

*Includes expenditures on personal health services and prescribed drugs. Excludes expenditures on non-prescribed drugs.
 **Includes general and public health expenditures and some grants-in-aid of research and education of health personnel.
 †Includes expenditures on hospitals, medical, dental and nursing schools and other public health capital. The difference between the estimate of spending assuming existing programmes and assuming expanded public programmes arises from the inclusion in the latter of the capital costs associated with a children's dental programme.
 ‡Includes only expenditures on hospital capital.
^a Including expenditures on research, total spending on health services and other health items would amount to \$2,019 million or \$111 per capita; see Table 11-7.
^b Estimated.
^c Projected.

Source: Tables 11-7, 11-26, 20-21, 20-26 and 20-27; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

programmes we project that the trend rate of growth in the period 1961-1966 will be 8.3 per cent and in 1966-1971, 8.0 per cent.

TABLE 20-5 ESTIMATED GROWTH RATE OF EXPENDITURES ON HEALTH SERVICES AND HEALTH CAPITAL IN CURRENT DOLLARS, WITH AND WITHOUT EXPANDED PUBLIC PROGRAMMES, CANADA, SELECTED PERIODS, 1957-1971
(percentages)

Period	Assuming Existing Public Programmes	Assuming Expanded Public Programmes			
	Growth Rate of Total Spending	Rate of Population Change	Rate of Change of Real Per Capita Spending	Rate of Change of Prices	Growth Rate of Total Spending
1957-1961	10.3	2.4	5.1	2.5	10.3
1961-1966	7.4	2.2	4.0	1.9	8.3
1966-1971	6.9	2.2	4.5	1.1	8.0

Source: Based on Tables 20-3 and 20-4.

Trends in the Prices of Health Services and Capital

We have examined already the trend rate of growth of output of health services and capital *assuming an expanded public programme*. Table 20-5 also indicates the projected trend rate of growth in the average level of prices of health services and capital that is implicit in our projections of expenditures in current dollars again assuming an expanded public programme. The projected rate of growth of total spending for the period 1961-1966 is 8.3 per cent of which 1.9 per cent is attributable to the trend rate of increase in prices, compared with 6.3 per cent attributable to the growth in population and real per capita expenditures. In the period 1966-1971 the projected trend rate of increase in price is somewhat lower, 1.1 per cent a year with 6.8 per cent attributable to increased total real spending.

Such a projection of price trends is in accord with the trend in prices of health services that we have described in Chapter 11. Between 1945-1949 and 1957-1961, the trend rate of growth declined from 7.4 per cent to 2.6 per cent and there seems no reason to assume, in view of the projected supply of health personnel and health capital, along with technical and organizational changes, that this process will not continue over the

next decade. What is more uncertain is that the trend rate of a rise in prices will increase at an average of only 1.1 per cent in the period 1966-1971. In Chapter 11 we described, at some length, the forces of supply and demand that have influenced prices in the past. With an expanded public programme, where financial barriers to the use of health services may be significantly removed, the demand for health care will increase while the relatively long period of time needed to produce professional personnel may make it difficult to meet this demand at once. In such circumstances, and if there were no agreement on a professional fee schedule, prices could rise more rapidly than the rate projected here and perhaps continue to increase at a rate of two to three per cent to the end of the decade; although this would be a high rate in view of the expansion of the supply of personnel projected in the late sixties.

Yet even if our projection ultimately under-estimates the upward trend in prices this does not mean that we have under-estimated, to any significant degree, the upward trend in total health expenditures in current dollars. If prices rise rapidly because the supply of health services fails to expand at a sufficiently high rate, the consequence will be that many people would be unable to obtain the health services they desire since the personnel do not exist to supply them. In such an event the projected trend rate of growth of real per capita expenditures described earlier in this chapter would not be achieved until the nineteen seventies, and the trend rate of growth of expenditures in current dollars down to 1971 would remain relatively unchanged since a higher trend rate of growth of price increase would be offset by a lower trend rate of growth of real per capita consumption.

As we have already emphasized we do not believe that the supply of health resources, existing and anticipated, is insufficient to prevent the implementation of the programmes we have recommended over the period 1966-1971. On the other hand, we are aware that the prices of many health services will necessarily rise—both because skilled and professional personnel will improve their qualifications and because some scarcities cannot be eliminated in a relatively short period of time. What we wish to stress here is: *Canada is capable of implementing an expanded health care programme without major inflationary pressures either in the health sector or in the economy as a whole.*

Projected Per Capita Spending

Our projections of total spending allow for a substantial increase in current dollar per capita outlays over the decade. Assuming no expansion of public programmes, it is estimated that per capita expenditures on health services and health capital, excluding expenditures on research and grants-in-aid of education, as indicated in Table 20-4 will rise from \$110 in 1961

to \$142 in 1966 and to \$178 in 1971. With an expanded public programme, it is estimated that per capita expenditures on health services and capital over this period will rise to \$147 in 1966 and to \$195 in 1971. If expenditures on research and grants-in-aid of education are included in this latter estimate, there is a small increase in total per capita spending to \$150 in 1966 and \$198 in 1971.

Health Expenditures as a Percentage of GNE

The projection of a trend rate of growth of spending that is declining relatively slowly does not necessarily mean that total spending is increasing less rapidly than other categories of spending. Assuming no expansion of public programmes, the proportion of total output allocated to health does not rise significantly since demand is unlikely to rise much more rapidly than the growth of income. The projected trend of spending however is still high enough to result in the proportion of Gross National Expenditure spent on health services and capital rising slightly. As can be seen from Table 20-4, assuming that Gross National Expenditure grows at the higher rate projected in Chapter 19, expenditures on health services and health capital will increase from 5.4 per cent of Gross National Expenditure in 1961 to 5.5 per cent in 1971, while with a lower rate of growth of Gross National Expenditure, the percentage projected for 1971 is 5.8 per cent.

Assuming an expansion of public programmes, involving a reduction of the barriers to consumption, health expenditures excluding expenditures on research and grants-in-aid of education are projected to rise only to 5.6 per cent of GNE in 1966 and to 6 per cent of GNE in 1971—assuming the higher rate of growth of GNE. With a lower rate of growth of GNE the percentages projected for 1966 and 1971 are 5.8 and 6.3 respectively. The consequences of the expansion of these public programmes then is to increase the percentage of GNE allocated to health services and capital in 1971 by between 0.6 and 0.9 per cent compared with 1961.¹

When research expenditures and grants-in-aid of education are included with health spending, Table 20-4 indicates that, assuming an expansion of public programmes, the percentage of GNE allocated to health in 1966 would rise from 5.6 per cent to 5.7 per cent and in 1971 from 6.0 to 6.1 per cent.

The major financial implications of these projections are:

1. Assuming no change in public programmes, and excluding expenditures for health research and grants-in-aid of education, between 1961 and 1966 per capita expenditures are projected to rise from \$110 to

¹ If all health research and grants-in-aid of education had been included in the 1961 estimate, the additional percentage of GNE spent on health would not likely have exceeded 0.3 per cent.

\$142, total expenditures to rise from \$2,007 million to \$2,873 million, and the percentage of GNE allocated to health care to remain unchanged at 5.4 per cent.

Between 1966 and 1971 per capita expenditures are projected to rise to \$178, total expenditures to rise to \$4,015 million and the percentage of GNE allocated to health care to increase to 5.5 per cent.

If GNE were to grow at a slower rate, in 1966 projected health expenditures would account for 5.6 per cent of GNE and for 5.8 per cent in 1971.

2. Assuming the implementation of the programmes recommended here, and excluding health research and grants-in-aid of education, between 1961 and 1966 per capita expenditures are projected to rise from \$110 to \$147, total expenditures to rise from \$2,007 million to \$2,994 million and the percentage of GNE allocated to health care to rise from 5.4 per cent to 5.6 per cent. Between 1966 and 1971 per capita expenditures are projected to rise to \$195, total expenditures to rise to \$4,407 million and the percentage of GNE allocated to health care to increase to 6.0 per cent.

If GNE were to grow at a slower rate, in 1966 projected health expenditures would account for 5.8 per cent of GNE and for 6.3 per cent in 1971.

If health research and grants-in-aid of health education are included with projected health expenditures, on the basis of the higher rate of growth of GNE, health care expenditures by 1971 would account for 6.1 per cent of GNE, total expenditures would amount to \$4,481 million and per capita spending amount to \$198.

Three points of major significance emerge from these projections. Without any expansion of public programmes, the per capita cost of health services and health capital will rise substantially up to 1971, but will increase but little as a percentage of GNE. The expansion of public programmes, on the other hand, does not lead to sizeable increases in the per capita expenditures. Excluding expenditures on health research and grants-in-aid of education, by 1966, assuming that the programmes were being implemented in that year for the first time, the increase would be only \$6 per person. In 1971, when we anticipate that the programme would be in full operation, the difference in per capita expenditures would be of the order of \$17. The addition of expenditures on health research and grants-in-aid of education would not increase these sums by more than \$3 per person in either 1966 or 1971. Finally, if a reasonable rate of growth of GNE is achieved in the Canadian economy, the implementation of our recommendations would not lead to a substantial increase in the proportion of GNE allocated to health

care, as the difference between existing public programmes and expanded public programmes by 1971 is of the order of one-half of one per cent of GNE.

PROJECTED COST OF INDIVIDUAL HEALTH SERVICES AND OTHER HEALTH ITEMS IN CURRENT DOLLARS, 1966 AND 1971

Projected Expenditures on Physicians' Services

PROJECTED EXPENDITURES ASSUMING EXISTING PUBLIC CARE PROGRAMMES

Estimated expenditures on physicians' services have been calculated by projecting the number of physicians providing personal health services and the average gross income of such physicians. The number of physicians that we expect to be practising in Canada in the years 1966 and 1971 has been estimated in Chapter 13. Since we are concerned to estimate the cost of personal health services, it is necessary, therefore, to eliminate from the total number of physicians, that proportion who are engaged in salaried practice in hospitals, interns, and physicians employed in education, research and administration in business, government, industry or the university, since outlays for the services of these professional persons are included in some other health expenditure. For example, the expenditures on salaried physicians employed in hospitals are included with hospital expenditures. An examination of the distribution of physicians by type of employment in 1961 suggests that about 73.5 per cent were employed in providing personal services. We have assumed that this proportion will not change significantly over the decade. On this basis it is projected that the number of physicians providing personal health services will rise from 15,640 in 1961 to 19,576 in 1971.¹

The projected average gross earnings of physicians providing personal health services is based upon the trend rate of growth of average gross incomes over the period 1957-1961. In 1957, the average gross income of physicians providing personal health services is estimated to have been \$20,700 and to have risen to \$24,500 by 1961.² The trend rate of growth of gross income in this period amounted to 4.2 per cent a year and in 1960-

¹ See Table 20-6.

² Data supplied by Department of National Health and Welfare, *Research and Statistics Division*, May 1963. These estimates have been based on published and unpublished data supplied by Taxation Division, Department of National Revenue, from *sample aggregations* of income tax returns. This figure includes some earnings received in the form of wages and salaries by physicians who provide personal health services but it excludes income from property or other sources.

1961 to 3.8 per cent. In view of this trend, the average gross income of physicians, assuming no expansion of public programmes, is projected to rise somewhat less rapidly in the future.

The trend rate of growth for the period 1961-1966 is projected at 3.4 per cent; for the period 1966-1971 at 2.8 per cent and for the whole decade 3 per cent. By 1966, the average gross fee income of physicians is projected to be \$29,025 and by 1971 to rise to \$33,155. This increased income is the result of three factors: increased prices for services rendered, a greater volume of services rendered, more complex and more skilled care provided. This last factor is in turn affected by the continuing trend to specialization which will yield rising incomes to medical practitioners but it is difficult to isolate that proportion of increased income which is due to this development.

From the point of view of the cost of health services it is the gross income of physicians that concerns us. To complete the picture, we require information on net income, i.e., after deducting expenses to practise medicine. On the basis of taxation data it is estimated that expenses as a percentage of *gross fee income* in 1957 amounted to 38.7 while in 1961 the percentage was 36.2.¹ Assuming that these proportions change as little in the future as they did in the recent past we project that expenditures will represent 35 per cent of the gross income in 1966 and 1971. Hence the average net fee income of physicians would be about \$18,850 in 1966 and \$21,550 in 1971.

It should be noted that these figures do not include the income of physicians from property or other non-practice income. This makes it difficult to make comparisons with the projected rate of growth of average per capita income which include all labour and property incomes. Another factor limiting this comparison is that average per capita income is influenced by the age-sex structure of the population since average per capita income is derived by dividing total income by total population. Although the trend rate of growth of physicians' net professional income, *assuming no further development of public medical care programmes from those existing in 1962*, is a little less than that projected for average per capita income, this may be offset by the facts mentioned above. In any case a rough adjustment for family size would indicate that the effect of this lower rate of growth is not substantial since average family income, as a percentage of physicians' net fee income, would rise only from about 39 per cent to 42 per cent.

On the basis of these estimates as shown in Table 20-6, we project expenditures on medical care to rise from \$383 million in 1961, assuming no expansion of public programmes, to \$506 million in 1966 and to \$649

¹ *Ibid.*

million in 1971. In per capita terms the increases would be from \$21.01 to \$24.91 and \$28.72 respectively. This projected trend rate of growth of total and per capita spending on physicians' services is, as can be seen from Table 20-7, somewhat less than for the decade 1951-1961. If no comprehensive public medical programme is introduced, the trend rate of growth of total spending is projected at 5.4 per cent for the decade 1961-1971 compared with 9.6 per cent for the previous decade, while per capita spending is projected to grow at a trend rate of 3.2 per cent compared with 6.7 per cent in the period 1951-1961. Yet an average annual increase of 3.2 per cent a year sustained over a decade is still a relatively high rate of growth and this point should be borne in mind when comparisons are made with the high rate of growth of the preceding period.

The reasons for this slackening in the growth rate of spending are to be found primarily on the demand side. During the decade of the fifties, the rise in personal incomes and the spread of private insurance programmes, along with the substitution of public for private hospital insurance made it possible for many individuals to spend increasing amounts for medical care. Without the expansion of public medical care programmes the demand for physician services over the next decade is unlikely to be as buoyant since the demand for medical care would depend largely on two factors: (1) the growth of real incomes and the extension of insurance coverage to those groups who, because of occupation, of location or socio-economic status find it difficult to obtain private insurance coverage and (2) on the willingness of the Canadian public to devote a larger proportion of their rising earnings to health services. On the supply side, with the implementation of the special measures we recommend, there will be an increase in the supply of physicians over the decade 1961-1971 amounting to 4,000 and this should be sufficient to meet the expanded demand we envisage without a significant rise in the price of medical services other than that arising from changes in the quality of output.

PROJECTED EXPENDITURES ASSUMING A COMPREHENSIVE MEDICAL CARE PROGRAMME

Since our projection of the supply of physicians has been derived independently of the introduction of a comprehensive medical care programme, it is evident that the increased demand generated under such a programme would have to be met from the increased supply, productivity or longer work-week of Canadian physicians. During the nineteen fifties, with the heavy flow of physicians trained abroad, more were available to provide care for the growing population. Thus when population grew at a trend rate of 2.7 per cent, the supply of physicians grew at a trend rate of 4 per cent.

TABLE 20-7 AVERAGE ANNUAL PERCENTAGE CHANGE IN POPULATION, PHYSICIANS, EXPENDITURES ON MEDICAL CARE, SELECTED PERIODS, 1951-1971
(percentages)

Period	Population Growth	Estimated Number of Physicians Providing Personal Health Services	Physicians' Average Gross Income		Total Expenditure on Medical Care		Per Capita Expenditures on Medical Care	
			Assuming Existing Programmes*	Assuming a Comprehensive Programme	Assuming Existing Programmes	Assuming a Comprehensive Programme	Assuming Existing Programmes	Assuming a Comprehensive Programme
1951-56	2.8	4.0	—	—	9.4	—	6.5	—
1957-61	2.4	3.5	4.3	—	9.2	—	6.7	—
1951-61	2.7	4.0	—	—	9.6	—	6.7	—
1961-66	2.2	2.2	3.4	—	5.7	6.5	3.4	4.2
1966-71	2.2	2.4	2.8	6.2	5.1	8.6	2.8	6.4
1961-71	2.2	2.3	3.0	5.2	5.4	7.5	3.2	5.3

*Data on gross income not available before 1957. Trend rate of growth of net income in this period estimated to be 5.3 per cent.

SOURCE: Department of National Health and Welfare, *Research and Statistics Division*; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964; and Table 20-4.

With the expected decline in the rate of immigration in the nineteen sixties it is unlikely that foreign graduates would contribute as much as formerly to the supply of physicians and the latter will have to depend, to a greater extent, on the graduates of Canadian medical schools. This number is largely determined by the number already in the universities since the pre-medical class of 1963 will graduate in 1970. However, with the increased number of applicants for medical education and the expansion of teaching facilities, the supply of Canadian trained physicians, as we have pointed out in Chapter 13, will begin to expand at the end of the nineteen sixties and it is expected that the physician-population ratio will continue to improve through the nineteen seventies.

The increased demand resulting from the introduction of a comprehensive medical care programme could then be met, in part, by the projected increase in supply. There will also be some increase in the productivity of individual physicians during the next decade. In the past the concentration of patient care in hospitals permitted physicians to care for more patients each day as did the increased use of auxiliary staff in doctors' offices so that productivity of physicians rose significantly along with more intensive effort by physicians. Given the hours already worked by physicians it is unlikely that any significant increase in the work-week could be achieved without some effect on the quality of service. Physicians can be expected to continue to increase their productivity during the nineteen sixties but the gains, assuming present pattern of practice of medicine continues, are likely not to be as great as they have been in the late nineteen forties and nineteen fifties. The development of out-patient hospital care, the consolidation of patient care in hospital and the use of ancillary personnel and equipment in office practice will continue but, probably at a slower rate than in the past, unless new incentives are provided to practice in new ways which increase productivity without reducing quality. One example would be a significant increase in the practice of medicine in the form of group clinics such as we recommended in Chapter 2.¹

Taking into account these various trends we conclude that the volume of services provided by physicians will rise with the development of a comprehensive public programme and that expenditures on physicians' services will rise accordingly. Another factor that would tend to increase physicians' gross income is that physicians could be paid for services they now provide free or at less than their provincial fee schedule.

Assuming the introduction of a comprehensive medical care programme by 1966, we have then projected that the gross incomes of physicians will rise somewhat more rapidly and amount to \$30,150 in that year and to

¹ See Chapter 2, Recommendations 34 and 35.

\$40,720 by 1971.¹ Such an increase is the equivalent of a trend rate of growth of incomes of 5.2 per cent a year; about one per cent higher than in the period 1957-61. The trend rate of growth of incomes is projected to slow down again towards the end of the decade and to amount to 5 per cent in 1971.

Assuming no change from the public medical care programme existing in 1962, we have projected gross income of practising physicians to amount to \$29,025 in 1966 and \$33,155 in 1971. With a comprehensive medical care programme, we estimate gross income of medical practitioners to reach \$30,150 in 1966 and \$40,720 in 1971. The difference is \$1,125 in 1966 and \$7,565 in 1971.² Compared with 1961, levels of income of physicians assuming a national public programme would rise by 23 per cent between 1961 and 1966 and by 66 per cent between 1961 and 1971. Since we have projected that the ratio of expenses to gross fee income would average 35 per cent over the decade, net fee income is projected to amount to \$19,595 in 1966 and \$26,467 in 1971 an increase of 69 per cent compared with average per capita incomes which are projected to rise by between 50 and 60 per cent.³

One major change may come about as a result of the higher incomes earned by physicians. With higher net incomes earned in Canada, more physicians may be attracted from Europe or Canadian physicians may be induced to return to this country from the United States and fewer may leave for the United States.

Against this trend it was urged upon us that there may be an offsetting factor with some physicians leaving Canada because they do not wish to practise under a comprehensive medical care programme sponsored by public authorities.⁴ But in a programme organized with the co-operation of the profession as we recommend, this need not happen. On balance, we expect that these factors may not affect significantly the level of total expenditures projected here.

The cost of medical care with a comprehensive public programme, as shown in Table 20-6, is projected to rise to \$525 million in 1966 and to \$797 million in 1971, in current dollar terms, an increase in the latter

¹ Given the supply of physicians as projected above and the estimated cost of a medical programme in 1970 as calculated by Clarkson, G.C., *The Cost and Ability to Pay for Medical Services Insurance in Canada and Its Provinces*, Canadian Medical Association, Toronto, October 1962, p. 9, gross fee incomes of physicians would exceed \$40,000 by 1970.

² In 1966, the programme is assumed to be getting under way, and by 1971, the programme is assumed to be in full and effective operation.

³ See Table 19-3.

⁴ For a statement setting forth the number and type of physicians leaving the Province of Saskatchewan following the implementation of the Saskatchewan Medicare Programme, see "Review of Medical Loss" by H. A. L. Portnuff, M.D., President of Saskatchewan Division of the Canadian Medical Association, *Newsletter*, Saskatoon, December 1963.

year of \$148 million compared with the cost of medical care assuming no change in public programmes— a difference of 18 per cent. In per capita terms, the projected figure for 1971 is \$35.29 compared with \$28.72 without a programme, a difference of \$6.57. The projected trend rate of growth of total and per capita spending for the decade 1961-1971 is 7.5 per cent and 5.3 per cent respectively—in both cases a slower trend rate of growth than in the period 1951-1961 but still higher than the projected trend rate of growth of income.

COST OF A COMPREHENSIVE MEDICAL CARE PROGRAMME IN 1961

In the course of our analysis of Canadian medical care insurance and prepayment plans in 1961, we examined the cost of a medical care prepayment plan for the Canadian population in that year assuming alternative degrees of comprehensiveness.¹

In preparing this estimate, the experience of the Manitoba Medical Service has been used, along with certain other data from Saskatchewan medical prepayment plans. This experience was then applied to the remainder of Canada with allowance made for regional differences in family size and composition, as well as the proportion of older persons in the population. It is evident, however, that there are other factors that would influence the cost of a universal prepaid medical care plan, principally regional differences in the utilization of medical services and the prices of such services. Since it was not possible to adjust for these differences the estimates presented here must *not* be taken as representative of the cost of a national comprehensive medical care programme if such had been in existence in 1961.

Historically, there have been significant regional variations in the use of health services both in terms of volume and type of service. The data available indicates that before the introduction of the Hospital Insurance and Diagnostic Services Act or provincial hospital insurance programmes, the Western provinces used more hospital services than the Atlantic provinces² and the more limited data available for medical care utilization support this position.³ In consequence, an estimate based on the experience of Western provinces will tend to *over-estimate* the *initial* cost of a national programme

¹ For a more detailed account of this estimate see Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Chapter 6. Estimates, for the most part, are based on data from Manitoba Medical Service. Some additional data from Medical Services Incorporated in Saskatoon and from the Saskatchewan Medical Care Insurance Commission have also been used.

² See Madden, J. J., *op. cit.*

³ See Judek, S., *op. cit.*, Chapter 5.

since other provinces would have a lower rate of utilization. Again to the extent that there exists regional differences in the structure of prices, an estimate based on costs derived from the Western provinces can differ from the actual costs if such a programme were introduced.

In view of the limitations of the data, the estimate presented here should not be taken to represent the actual cost of a universal comprehensive medical care programme if such had existed in 1961. Alternatively, in view of our knowledge of the learning process associated with the introduction of a pre-paid medical care programme, the estimate is indicative of the level to which the cost of medical care services could rise assuming that the utilization experience of Manitoba Medical Services and the prices that ruled in Manitoba were to be achieved in all provinces. If each family in the Canadian population as a whole had obtained medical services, on the average equal to the services obtained by the corresponding families in the Manitoba Medical Service population, it is estimated that the per capita cost of medical care in 1961 would have amounted to between \$31 and \$32 compared with the estimated actual expenditure of \$21.¹ Some further details of this estimate are presented in the following tabulation:

ESTIMATED PER CAPITA COST, SELECTED CLASSES OF MEDICAL EXPENSES,
CANADA, 1961

Medical Expense Class	Per Capita Cost
	\$
In-hospital services	11.93
All services other than surgery and maternity*	21.27
Home and office calls	10.91
Laboratory and X-ray services	5.42

* Well-baby care included in maternity.

SOURCE: Berry, C. H., *Voluntary Medical Insurance and Prepayment*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964, Table 6-7.

The estimated cost of a programme that included all services that might be performed in hospital, would have been \$11.93, home and office calls \$10.91 and all services other than surgery and maternity, \$21.27. It is evident that a medical service programme that limited itself to in-hospital services or to surgical and maternity services only, would exclude a substantial proportion of the medical services that a comprehensive programme is designed to cover.

¹ See Berry, C. H., *op. cit.*, Table 6-5.

Projected Expenditures on Dentists' Services

Two estimates of expenditures on dentists' services have been developed; the first assuming continuation of existing programmes for the provision of dental services and the second assuming the introduction by 1968 of the Children's Dental Programme, outlined in Chapter 2.

PROJECTED EXPENDITURES ASSUMING EXISTING PUBLIC DENTAL PROGRAMMES

The estimated expenditures on the basis of existing programmes have been projected by using the trend rate of increase in the number of dentists providing personal health services and changes in the average gross income of these practitioners. The total number of dentists in Canada in 1961 and the estimated number in 1966 and 1971 are provided in Chapter 13. Not all of these dentists are engaged in providing personal health services. Hence the estimated cost of the services of dentists, when employed in hospitals, government and education must be excluded. In 1961, about 450 dentists were employed in hospitals, dental schools and government; about 7.7 per cent of the total. It has been estimated that this number will increase to 580 by 1970, principally through the employment of more dentists in dental schools, which is the equivalent of assuming that a substantially unchanged proportion of dentists (92.0 per cent) will be engaged in the provision of personal health services throughout the period. The projected number of dentists providing personal health services and the trend rate of growth of the supply of dentists are presented in Tables 20-8 and 20-11. With a relatively slow rate of growth of the supply of dentists in the period 1961-1966 the population-dentist ratio rises from 3,372 to 3,475. After 1966, with the expansion of the output of dental schools, the trend rate of growth of dentists is projected at 2.4 per cent, somewhat higher than the rate of population growth and, as a consequence, the dentist-population ratio is projected to fall to 3,434 by 1971. Over the period 1961-1971, the average annual rate of growth is projected at 2 per cent compared with 1.8 per cent for the period 1951-1961.

During the period 1951-1961, it is estimated that the average gross income of dentists providing personal dental services increased at an average annual rate of 7 per cent a year. This increase, as was pointed out in Chapter 11, partly was the consequence of the high productivity of dental practitioners achieved through the use of more specialist equipment and ancillary personnel along with new materials, and improved techniques that permitted dentists to treat more patients per unit of time. At the same time the rise in personal disposable income, along with the substitution of public hospital insurance for private hospital insurance, made it possible for families and individuals

TABLE 20-8 ESTIMATED COST OF DENTISTS' SERVICES ASSUMING EXISTING PUBLIC PROGRAMMES, CANADA, SELECTED YEARS, 1961-1971*

Year	Population '000,000	Estimated Number of Dentists	Percentage Providing Personal Health Services*	Number Providing Personal Health Services	Population Per Dentist Providing Pers. Health Services	Estimated Average Gross Income**	Cost of Dental Services \$'000,000	Per Capita Cost of Dental Services \$
1961	18.24	5,868	92.2	5,410	3,372	21,960	118.8	6.51
1963†	18.98	6,045	92.2	5,575	3,404	24,190	134.8	7.10
1966††	20.30	6,336	92.2	5,842	3,475	27,840	162.5	8.00
1971††	22.59	7,136	92.2	6,579	3,434	32,560	214.2	9.48

*Excludes salaried dentists in hospitals and dentists employed in government, business, education, research and administration.

**Includes income received in some cases from wages and salaries.

†Estimated.

††Projected.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 20-9 ESTIMATED COST OF CHILDREN'S DENTAL CARE PROGRAMME, AGES 3-18, CANADA,
1968 AND 1971*

Year	Estimated Number of Dentists in Programme	Average Income of Dentists**	Cost of Dentists' Services	Estimated Number of Auxiliaries	Average Salary of Auxiliaries	Cost of Services of Dental Auxiliaries	Total Cost of Dentists' and Auxiliaries' Services	Other Costs†	Estimated Total Cost of Programme	
									Total	Per Capita
1968	650	\$ 16,560	\$'000,000 10.8	1,000	\$ 6,000	\$'000,000 6.0	\$'000,000 16.8	\$'000,000 7.2	\$'000,000 24.0	\$ 1.13
1971	1,000	\$ 18,705	\$'000,000 18.7	3,800	\$ 6,500	\$'000,000 24.7	\$'000,000 43.4	\$'000,000 18.7	\$'000,000 62.1	\$ 2.75

*Based on the age groups, dental needs, utilization rates, supply of personnel outlined in Chapter 13. Assumes rising utilization rates of various age groups and 1,000 dental auxiliaries graduated each year in 1970, with 1,500 graduates thereafter.

**Estimated to be 55 per cent of gross incomes of dentists providing personal dental services assuming the introduction of a children's dental care programme; \$34,010 in 1971.

†Assumed to be the equivalent of 30 per cent of the cost of the programme. Excludes interest and depreciation allowances on capital. Includes cost of both office and other technical personnel.

SOURCE: Data from Chapter 13; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 20-10 ESTIMATED COST OF DENTISTS' SERVICES WITH AND WITHOUT A CHILDREN'S DENTAL CARE PROGRAMME, CANADA, SELECTED YEARS, 1966-1971

Year	Cost of Care Provided Outside Programme		Cost of Care Provided Under Children's Programme		Total Cost of All Dental Services	
	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost	Total Cost	Per Capita Cost
	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$
Assuming Existing Public Dental Programmes						
1966	162.5	8.00	—	—	162.5	8.00
1971	214.2	9.48	—	—	214.2	9.49
Assuming Children's Dental Programme*						
1968	180.9	8.54	24.0	1.13	204.9	9.67
1971	209.2	9.26	62.1	2.75	271.3	12.01

*Based on the assumptions outlined in Chapter 13. Cost of care outside of the programme calculated by subtracting dentists in the programme from estimated supply of dentists rendering personal health services and using an estimated average gross income which amounts to \$34,010 in 1971.

SOURCE: Based on Tables 20-8 and 20-9.

to spend more for dental care and thus provide increasing effective demand for the services of the relatively slow-growing supply of dental practitioners. The rate of increase in dentists' income was reduced towards the end of the nineteen fifties and this trend is likely to continue over the next decade if there is no further expansion of public programmes or prepaid dental programmes. Hence the first projection we submit is based upon the assumption of a more rapid increase in the supply of dentists towards the end of the sixties, a slowing down in the rate of growth of demand as those groups who have the income to finance dental services receive most of the dental care they require and finally, that the productivity of dentists is not likely to grow as rapidly over the next decade as it has in the past. Dentists' average gross incomes will continue to increase, however, since rising real per capita incomes will lead more families to purchase dental services. Further the adoption of improved practice techniques by more and more dentists will permit average productivity to rise even if there is little change in technology, and with some improvement in technology, productivity is likely to increase even more. Assuming no major technical break-through in the practice of dentistry it is likely that productivity gains will be somewhat less than those achieved in the post-war period. The average gross income is projected to grow from \$21,960 in 1961 to \$32,560 in 1971, an increase of about

50 per cent.¹ This is the equivalent of a trend rate of growth of 4 per cent a year compared with 7 per cent in the period 1951-1961. The projected trend rate of growth for the period 1961-1966 is 4.8 per cent and for the period 1966-1971 is 3.2 per cent.

Combining the projected supply of dentists and average gross income, the estimated expenditures in the years 1966 and 1971 are shown in Table 20-8. Total expenditures are projected to rise from \$119 million in 1961 to \$162 million in 1966 and to \$214 million in 1971. Per capita expenditures are projected to rise from \$6.51 to \$8.00 and \$9.48 respectively. The projected trend rate of growth of total spending is lower for the period 1961-66 compared with 1957-1961, 6.5 per cent compared with 8 per cent; while for per capita spending the projected trend rate of growth of spending is 4.2 per cent compared with 5.4 per cent. For the whole period the trend rate of growth of total spending is projected to decline to 6.1 per cent and per capita spending to 3.9 per cent (see Table 20-11).

We turn now to our second estimate of dental expenditures assuming a public programme such as we recommend.

PROJECTED EXPENDITURES ASSUMING AN EXPANDED PUBLIC DENTAL CARE PROGRAMME

Children's Programme—Since the supply of dentists has been projected separately, the additional costs arising out of the Children's Dental Programme outlined in Chapter 13, will depend on the rate of increase in dentists' gross incomes consequent on an increase in demand for their services and the costs of dental auxiliaries, ancillary personnel and operating costs of dental clinics that such a programme uses. In the face of a subsidized increase in demand dentists' incomes are likely to rise somewhat more rapidly than we suggested in our first estimate. We now project a trend rate of growth of 4.1 per cent for the quinquennium 1966-1971 compared with 3.2 per cent without a programme and for the decade the projected annual increase is 4.5 per cent, compared with 4.0 per cent. On these projections it is estimated that the average gross incomes of dentists providing personal health services would amount to about \$30,110 in 1968 and to \$34,010 in 1971.

The average gross income of dentists in 1971, assuming no Children's Dental Programme has been estimated at \$32,560 and with a programme

¹ The estimated growth rate of gross income we have assumed is based upon the trend rate of growth of net income reported for taxation purposes. Information supplied by Department of National Health and Welfare, *Research and Statistics Division*, that the net earnings of dentists which have been rising as a percentage of gross income in 1961 would amount to 55 per cent of gross incomes in 1966 and 1971. Net incomes of dentists are estimated to rise from \$10,980 in 1961 to \$17,908 in 1971, an increase of 63 per cent over the decade.

at \$34,010, a difference of \$1,450 or 4.3 per cent. As the average gross income of dentists is estimated at \$21,960 for 1961, this profession may expect an increase of 55 per cent in their gross incomes by 1971 assuming the introduction of a Children's Dental Programme. Since net incomes are projected to amount to 55 per cent of gross incomes by 1971,¹ the average net income of dentists after the introduction of the programme is estimated to be \$18,705 in that year. Relative with 1961 this is the equivalent of an increase in net incomes of 70 per cent compared with a projected increase in the average incomes of Canadians of 50 to 60 per cent.² Such an increase should be an incentive to encourage entry into the practice of dentistry.

The average income of dentists providing services in the programme has been estimated to be the equivalent of the net earnings of dentists providing personal health services outside the programme and is projected to amount to \$16,560 in 1968 and to \$18,705 in 1971 (see Table 20-9).³

The average earnings of dental auxiliaries in the programme have been tentatively set at \$6,000 in the year 1968 and \$6,500 in 1971. This estimate may well turn out to be too high but is based upon the amount that we believe might be needed five years hence to attract personnel into this particular occupation. To the extent that such personnel can be obtained for lower salaries than those presented here, the cost of implementing a Children's Dental Programme would then be correspondingly less. The other costs of the programme, excluding interest and depreciation on capital made available from public funds, are estimated to be 30 per cent of the total cost of the programme and includes the cost of other ancillary personnel such as dental assistants, clerical personnel, materials and other operating costs.

Allowing for the difficulties faced in providing sufficient personnel to implement the programme fully by 1968 and since, as we pointed out in Chapter 13, there is a learning process involved which would limit use of the programme in its early stages, we have estimated the cost of a Children's Dental Programme given the assumption of a rising utilization rate and the graduation of 1,000 dental auxiliaries commencing in 1968. The cost of such a programme is set out in Table 20-9. In the first year of the programme, total costs are estimated to be \$24 million and are projected to rise to \$62 million by 1971. Per capita costs are estimated at \$1.13 in 1968 and are projected to increase to \$2.75 by 1971.

¹ See footnote 1, p. 821.

² See the discussion on pp. 810, 811 for the limitations of this comparison.

³ The projected average net income of dentists in 1971 is estimated to be about 70 per cent of the projected average net income of physicians providing personal health services in that year, the same as in 1961. The difference in income represents, in part, the return on a greater amount of investment in human capital in the average physician.

TABLE 20-11 AVERAGE ANNUAL PERCENTAGE CHANGE IN POPULATION, DENTISTS AND EXPENDITURES ON DENTAL CARE, CANADA, SELECTED PERIODS, 1951-1971
(percentages)

Years	Population Growth	Number of Dentists Providing Personal Health Services	Dentists' Average Gross Income*		Total Expenditures on Dental Care		Per Capita Expenditures on Dental Care	
			Assuming Existing Programmes	Assuming a Children's Dental Programme	Assuming Existing Programmes	Assuming a Children's Dental Programme**	Assuming Existing Programmes	Assuming a Children's Dental Programme
1951-1956	2.8	2.0	8.0	—	9.8	—	6.8	—
1957-1961	2.4	1.5	4.8	—	8.0	—	5.4	—
1951-1961	2.7	1.8	7.0	—	8.8	—	6.0	—
1961-1966	2.2	1.5	4.8	—	6.5	—	4.2	—
1966-1971	2.2	2.4	3.2	4.1	5.7	—	3.4	—
1961-1971	2.2	2.0	4.0	4.5	6.1	8.6	3.9	6.3

*Based on the trend rate of growth of net income of dentists including income from practice, investments and other non-professional income. Gross incomes not available.

**Based on Table 20-9.

SOURCE: Based on Tables 20-8, 20-9 and 20-10; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Programme for Recipients of Public Assistance—In addition to a Children's Dental Programme, we have recommended a programme that would provide recipients of public welfare, including recipients of old age assistance, with the dental care they need, including dentures. Part of the cost of such a programme is already included in our estimated cost of dental care since welfare recipients in some provinces already receive dental care. Many others, since they already have satisfactory dentures, would not require dental treatment. In view of the limited extent of the unmet need of this group it is unlikely that the additional annual cost of providing such care would amount to more than \$10 million in 1971. In view of the limited information, this amount has not been included in the cost of a dental care programme as shown in Table 20-9 but its exclusion does not significantly affect either the cost of expanded public programmes or the cost of dental care.

Total Expenditures—The total cost of dental care, assuming the introduction of a Children's Dental Programme, is set out in Table 20-10. In 1968, total expenditures are estimated to be \$204.9 million and per capita expenditures to be \$9.67. By 1971 total expenditures are projected at \$271 million and per capita expenditures at \$12.01.

The effect of the introduction of a Children's Dental Programme on the trend rate of growth of spending is shown in Table 20-11. The trend rate of total spending for the decade is raised from 6.1 to 8.6 per cent a year and for per capita spending from 3.9 to 6.3 per cent a year. In terms of additional dollars spent, in 1971 the difference between the per capita cost of dental services with no expansion of public programmes and the cost of such services after the implementation of a Children's Dental Programme is \$2.52. In terms of total costs, the difference is \$57 million.

Projected Cost of Glasses for Children Aged 0-18 and Recipients of Public Assistance

Limited data available make it possible for us to present only a broad indication of the order of magnitude of expenditures in 1966 and 1971 on the cost of providing glasses to the two groups which we believe should be covered: children 18 years and under and welfare recipients. Because of the tentative nature of these estimates the projected level of spending should be revised on the basis of the experience gained from a programme after it has been in operation for a few years.

CHILDREN'S PROGRAMME

The cost of providing prescription glasses for children will depend on the initial demand for glasses consequent on the introduction of a public programme, the utilization rate of children born after its inception; the

replacement demand arising from the need to change prescriptions or replace lost and broken glasses; the cost of examinations, refractions, prescription lenses and frames.

We assume that 20 per cent of children in the age group 0-18 would require glasses in 1966 and this yields about 1.7 million children. This assumption is based on the results of various studies indicating a percentage of this order among children of school age.¹ It will be noted that this is an average of the experience of very young children, few of whom need glasses, and teen-aged children who would require glasses to a much greater degree than the very young. It is possible, however, that the actual demand for glasses could be considerably less than this on the introduction of a programme. In many cases, children already have prescription glasses, in other cases temporary shortages of physicians or optometrists may prevent children from obtaining glasses in the first year or so, while in other cases, parents will fail to ensure that an examination is made or is followed up by the filling of a prescription. The educational process associated with the introduction of a new programme, along with limited facilities in some regions, indicate that the demand for glasses in the first year could be considerably less than 1.7 million pairs. Allowing for these factors it has been assumed that only 50 per cent of the 1.7 million would actually obtain glasses in 1966, the equivalent of .83 million. The remainder of the group that need glasses is assumed to have obtained them over the period 1967 to 1970. In the last year it is estimated that the demand for glasses would amount to .20 million pairs.

Once over the initial period, with its large amount of unmet need, the demand for glasses would depend on the growth of the population aged 0-18, the age at which this group require glasses and the rate at which glasses are replaced for those already possessing them. Over the decade 1966 to 1976, the average number of children born each year is estimated to be between .5 and .6 million. If these children require no glasses until age 4, and then a proportion each year obtain glasses until at age 18, 20 per cent of the group have been supplied, then the number of glasses needed for new recipients in 1971 would be about 15,000 and by 1976 would have risen to about 50,000. Since our knowledge of the rate at which glasses need to be replaced because of loss, breakage and changes in prescriptions is limited, we have assumed that they are replaced, on the average, once every five years and for any group, replacement is spread evenly over the five-year period. The result is that by 1971, the replacement demand is estimated to amount to .35 million pairs and to rise to .60 million pairs by 1976.

¹ *Canadian Association of Optometrists*, brief submitted to the Royal Commission on Health Services, Toronto 1962, Exhibit No. 19; Gray, D. G. "Who Wears Spectacles?", in *The Lancet*, Sept. 22, 1951, p. 537; and the results of a count of public school children having glasses, communicated by Dr. R. A. Kennedy, Medical Officer of Health, City of Ottawa.

TABLE 20-12 ESTIMATED COST OF PROVIDING GLASSES FOR CHILDREN AGE 0-18, CANADA, 1966 AND 1971

Year	Estimated Population Age Group 0-18	Number Obtaining Glasses			Estimated Cost of Glasses	Total Cost of Glasses
		Initial	Replacement	Total		
	'000,000	'000,000	'000,000		\$	\$'000,000
1966	8.30	.83	—	.83	30.00	27.9
1971	9.10	.15	.35	.50	33.90	16.9

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Our projection then as shown in Table 20-12, is that the demand for glasses in the initial year will amount to .83 millions. After 1966, the demand will be somewhat lower and in 1971, new demand and replacement demand are estimated to amount to about .5 million glasses and that this will have risen to 1.1 million by 1976.

As the cost of medical services projected for 1966 and 1971 already includes the cost of all services provided by physicians, expenditures on children's glasses under this programme will depend on the cost of a refraction carried out by an optometrist and the cost of lenses and frames. On the basis of the historical trend rate of growth of prices of frames, lenses and refractions it has been estimated that the cost of such services would amount to about \$30 per prescription in 1966 and to \$33.90 in 1971. The total cost of providing glasses under the assumptions outlined here would amount to \$27.9 million in 1966 and to \$16.9 million in 1971, while the per capita cost would be \$1.37 and \$.75 respectively.

PROGRAMME FOR RECIPIENTS OF PUBLIC ASSISTANCE

The programme for the recipients of public assistance outlined in Chapter 2 would include glasses for recipients of Old Age Assistance, Allowances for Disabled Persons and recipients of Mother's Allowance excluding children. In March 1960, this group amounted to 198,599 persons or 1.86 per cent of the population over 18 years and it is projected that this percentage will remain constant down to 1971.¹ Table 20-13 indicates that such a projection would imply 223,000 recipients of public assistance in 1966 and 251,000 in 1971.

¹ See *Canada Year Book*, Dominion Bureau of Statistics, Ottawa: Queen's Printer, 1961, pp. 272-277.

TABLE 20-13 ESTIMATED COST OF PROVIDING GLASSES FOR RECIPIENTS OF PUBLIC ASSISTANCE, CANADA, 1966 AND 1971

Year	Estimated Population Minus Age Group 0-18	Estimated Number of Recipients of Public Assistance	Estimated Utilization Rate	Number Obtaining Glasses	Estimated Price of Glasses	Estimated Cost of Glasses
	'000,000				\$	\$'000,000
1966	12.00	223,000	15.0	33,450	30.00	1.00
1971	13.49	251,000	15.0	37,650	33.90	1.28

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

It is likely that a substantial number of these persons already possess glasses and that the demand will come from the small proportion who, each year, become aware of the need for glasses or who must replace them because of a change in prescription. We estimate that this group amounts to 15 per cent of the covered population each year and on this basis it is projected that the number of glasses supplied would be 33,450 in 1966 and 37,650 in 1971.¹ The cost of these glasses would be \$1 million in 1966 and \$1.3 million in 1971 as shown in Table 20-13.

The total cost of providing glasses for children and recipients of public assistance is projected to be \$28.9 million in 1966 and \$18.2 million in 1971, or, on a per capita basis, \$1.42 and \$0.81 respectively.

TABLE 20-14 ESTIMATED COST OF PROVIDING GLASSES FOR CHILDREN AND RECIPIENTS OF PUBLIC ASSISTANCE, CANADA, 1966 AND 1971

Year	Cost of Children's Programme	Public Assistance Recipients' Programme	Total Cost	Per Capita Cost
	\$'000,000	\$'000,000	\$'000,000	\$
1966.....	27.9	1.0	28.9	1.42
1971.....	16.9	1.3	18.2	0.81

SOURCE: Based on Tables 20-12 and 20-13.

¹ Canadian Association of Optometrists, *op. cit.*, pp. 25-27.

Projected Expenditures on Prescribed Drugs

PROJECTED EXPENDITURES ASSUMING EXISTING PUBLIC PROGRAMMES

The projected expenditures on prescribed drugs,¹ assuming no expansion of existing public programmes, has been based on the trend rate of growth of such spending over the past decade. The growth of total and per capita spending on prescribed drugs has been slowing down recently,² partly because prices have not risen as rapidly as they did in earlier periods and

TABLE 20-15 ESTIMATED EXPENDITURES ON PRESCRIBED DRUGS, CANADA, SELECTED YEARS, 1961-1971

Assuming Existing Public Programmes							
Year				Total Expenditures		Per Capita Expenditures	
				\$ '000,000		\$	
1961.....				111.5		6.11	
1963*.....				127.4		6.71	
1966**.....				153.5		7.56	
1971**.....				203.0		8.98	

Assuming a Comprehensive Public Programme, 1966 and 1971							
Year	Number of Prescriptions Per Capita	Total Prescriptions	Estimated Average Cost of Prescriptions	Total Cost		With Payments By Consumer of \$1 Per Prescription	
				Total	Per Capita	Total	Per Capita
		'000,000	\$	\$ '000,000	\$	\$ '000,000	\$
1966**	3.5	71.0	3.30	234.3	11.54	163.3	8.04
1971**	4.5	101.6	3.55	360.7	15.97	259.1	11.47

*Estimated.

**Projected.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

¹ Defined to cover pharmaceuticals supplied by retail outlets on prescription of medical or dental practitioners. Prescription drugs provided in hospitals and institutions for the chronically ill are included in the cost of hospital care. Prescription drugs provided directly by physicians are included in the cost of medical services.

² See Tables 11-12 and 11-13.

partly because it appears that there has been some slowing down in the per capita consumption of prescription drugs.¹ There is no reason to believe that these trends will reverse themselves in the near future and the trend rate of growth of spending, assuming no change in public programmes, is projected at 4.4 per cent as the average for the years 1961-1966 and an average of 3.5 per cent a year in the period 1966-1971 (see Table 20-16). This compares with a trend rate of growth of 4.6 per cent in the period 1957-1961. In 1966 such a projection indicates that expenditures will amount to \$153 million and by 1971 will amount to \$203 million. Per capita spending has been projected to rise from \$6.11 in 1961 to \$7.56 in 1966 and \$8.98 in 1971 (see Table 20-15).

TABLE 20-16 AVERAGE ANNUAL PERCENTAGE CHANGE IN EXPENDITURES ON PRESCRIBED DRUGS, CANADA, SELECTED YEARS, 1951-1971

Period	Percentage Change Expenditures on Prescription Drugs Assuming No Expansion of Existing Programmes		Percentage Change Expenditures on Prescription Drugs Assuming a Comprehensive Prescription Drug Programme	
	Total	Per Capita	Total	Per Capita
1951-1956.....	11.9	8.8	—	—
1957-1961.....	7.2	4.6	—	—
1951-1961.....	10.0	7.2	—	—
1961-1966.....	6.6	4.4	16.0	13.6
1966-1971.....	5.7	3.5	9.0	6.8
1961-1971.....	6.2	3.9	12.5	10.1

SOURCE: Based on Tables 11-1 and 20-13; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

PROJECTED EXPENDITURES ASSUMING A COMPREHENSIVE PUBLIC PROGRAMME

On the assumption of the introduction of a public programme there is little doubt that the use of prescribed drugs will increase. What the new level of utilization would be is more difficult to assess. Except for the prepaid plan operating in Windsor, Ontario, under the auspices of Prescription Ser-

¹ For the tendency of consumption of prescribed drugs to rise less rapidly see Fuller, H. J., Canadian Retail Pharmacy in 1962, *Canadian Pharmaceutical Journal*, Toronto, Sept. 1963, Volume 96, Number 9, Special Supplement, p. 21. Between 1957 and 1962, prescriptions per capita, as measured by this survey, have remained relatively constant around 2.4 per person while the trend rate of growth of the average price of a prescription has also slowed down, particularly in 1961 and 1962.

vices, Inc., the only other data relate to provincial welfare programmes or the experience of the United Kingdom, New Zealand, United States and other countries.¹ The experience of the Windsor plan cannot be taken to be representative of the experience for Canada as a whole. The programme may have more than a proportionate share of members who need large amounts of drugs since it is to their advantage to enrol. It may also be influenced by the fact that this is an urban area with a particular prepaid medical plan and a different physician-population ratio from most other regions.

Welfare programmes offer an inadequate guide to the utilization experience of the Canadian population except to set limits beyond which the volume of prescriptions is unlikely to go. With prescribing practices of physicians and the desire of patients for prescription drugs being substantially influenced by the number of doctors, hospital beds, prepayment plans, methods of remunerating physicians, and the whole complex of forces affecting national or regional practice of medicine, the experience of foreign countries appears to have limited relevance for Canada.

The estimated cost of a programme was derived by assuming that the average number of prescriptions per capita would rise from the average of 2.4 as reported in the surveys conducted by Professor Fuller for the Canadian Pharmaceutical Association to 3.5 prescriptions per person upon the introduction of the plan in 1966 and to 4.5 prescriptions per person by 1971 (see Table 20-15). This latter figure is equivalent to the average prescribing experience of the Green Shield Plan (Prescription Services, Inc., of Windsor) which was 4.44 per person in 1959-1960, but is somewhat lower than the utilization rate of New Zealand and Great Britain.

The average price of prescriptions that will be characteristic of the years 1966 to 1971 again is difficult to predict on the basis of past trends. The index of drug prices as reported by the Dominion Bureau of Statistics has not risen in recent years while the prices reported in the Survey of the Canadian Pharmaceutical Association have risen, but at a declining rate. In this projection it has been assumed that the average price of prescriptions in 1962, as reported in the Canadian Pharmaceutical Survey is representative of most prescription prices and this amount (\$3.16) is projected to rise slowly to \$3.30 in 1966 and to \$3.55 by 1971. The trend rate of growth of prices for the period 1958-1962 was approximately 2 per cent a year.² For the decade 1961-1971, the trend rate of growth is projected at 1.3 per cent.

On the basis of projected utilization rates and price trends Table 20-15 indicates that the cost of a comprehensive public programme in 1966 would

¹ *Canadian Pharmaceutical Association, Inc.*, brief submitted to the Royal Commission on Health Services, Toronto, May 1962, pp. 167-170.

² For qualifications relating to the difficulties of measuring full price changes of prescription drugs and the necessity to improve the statistical information on this subject, see Chapter 17.

amount to \$234 million and in 1971 to \$361 million. On a per person basis, the estimated cost in 1966 is \$11.54 and in 1971, \$15.97. Given the increased availability of medical care upon the introduction of a comprehensive medical care programme, the ease with which the supply of prescription drugs could be expanded and given a programme such as we recommend¹ in which prescription drugs are available at a payment of \$1 per prescription by the user there would be a considerable rise in spending on prescription drugs and the trend rate of growth of both total and per capita spending projected for the decade 1961-1971 is higher than that experienced in the decade 1951-1961. For the period 1951-1961, total expenditures rose at a trend rate of 10 per cent a year and per capita spending at a trend rate of 7.2 per cent. For the period 1961-1971, the trend rate of total spending is projected at 12.5 per cent and per capita spending at 10.1 per cent. The rate of growth of spending is projected to slacken off by the end of the decade and would rise less rapidly through the decade of the nineteen seventies.²

The additional expenditures arising from the introduction of a comprehensive public programme can be seen from Table 20-15. The additional total cost is projected to amount to \$81 million in 1966 and to \$158 million in 1971. The additional per capita cost in 1966 is projected at \$4; in 1971 at \$7.

Projected Expenditures on Hospital Care

Two estimates of the cost of hospital care have been developed; the first based on the continuation of existing trends and programmes, the second based upon our recommendation that mental and tuberculosis hospital care should be integrated as quickly as possible into the general hospital programme and brought within the scope of the Hospital Insurance Act.

PROJECTED EXPENDITURES ASSUMING EXISTING PUBLIC PROGRAMMES

In Chapter 14 we pointed out that the provision of physical facilities, specialist personnel, rehabilitation programmes, sources of funds and administrative knowledge all have played a part in making the general hospital the centre for diagnosis, treatment and rehabilitation for illness of all kinds. The consequence of these developments has been that patients are treated in multi-purpose general hospitals rather than in special hospitals and that the chronically ill are cared for in public hospitals rather than in proprietary nursing homes or municipal homes as in other countries.

¹ See Chapter 2, Recommendations 58 and 59.

² We have assumed that a number of proposals which we have made in Chapter 2 such as the adoption of a National Formulary and the increased prescribing of drugs by their generic names would be in practice offsetting to some extent trends towards higher drug costs.

In view of these trends we have not projected the volume of hospital care in short-term active treatment hospitals, chronic and convalescent hospitals, children's hospitals, etc. Rather we have projected the days of care that will be provided in tuberculosis hospitals, mental hospitals and all other hospitals taken together and our projections appear in Tables 20-17 and 20-18.¹

The projected cost of hospital care in *general and allied special* hospitals is set out in Table 20-17 and has been derived by multiplying the projected days of hospital care by the projected average per diem cost of such care. In 1961, according to these projections the total cost of hospital care amounted to \$763 million or \$41.81 per person. In 1966, it is projected that such hospital care will cost \$1,254 million, \$61.76 per person; and in 1971, \$1,893 million or \$83.78 per person.

It is evident from the amount of these expenditures that the cost of hospital care is projected to be the most significant item of health spending in the future as it has been in the past. With total spending projected to rise two and one-half times and per capita spending to double within the decade 1961-1971, the growth of spending clearly has been projected at a high level. Compared with the recent past, however, the trend rate of growth of total spending projected is somewhat lower since in the period 1953-1961, the annual average increase in total expenditures amounted to 10.5 per cent while the average annual rate of increase projected for the period 1961-1971 is 9.5 per cent. This projected growth rate is determined, as we have indicated, by the volume of hospital care and the cost of a day of hospital care and it is to these items that we now turn our attention in order to account for the projected development.

The volume of hospital care provided in general and allied special hospitals in 1961 amounted to 38.65 million days and is projected to rise to 48.84 million days by 1971. This is a sizeable increase but its contribution to the growth rate of total spending is 2.4 per cent a year, only a little more than the projected growth of population for this period. Each Canadian, on the average, will receive slightly more days of hospital care each year but the increase in spending arising from the provision of more days of hospital care is essentially the consequence of population growth and assuming no change in the pattern of illness, medical care and all the other factors that influence hospital utilization, is unlikely to change drastically. Clearly, the major factor contributing to the growth of total spending on hospital care is the projected rate of growth of per diem costs of hospital care—7 per cent for the decade 1961-1971.

¹ For a description of this projection see Chapter 14.

When we turn to the historical trend of the per diem cost of hospital care, we possess data that go back to the year 1913.¹ For example, between 1913 and 1926 the cost of maintaining one patient for one day rose from \$1.68 to \$3.27, a trend rate of growth of 5.3 per cent a year. If this trend rate had been projected to 1961 it would have been a fairly reasonable projection since over these 47 years the average cost of a day of hospital care has risen at a rate of about 5.3 per cent a year. On the

TABLE 20-17 ESTIMATED COST OF HOSPITAL CARE IN GENERAL AND ALLIED SPECIAL HOSPITALS, CANADA, SELECTED YEARS, 1961-1971*

Year	Adult and Children Days	New-born Children Days	Total Days of Care	Average Cost Per Day	Total Cost of Hospital Care	
					Total	Per Capita
	millions	millions	millions	\$	\$ '000,000	\$
1961	35.72	2.93	38.65	19.73	762.6	41.81
1963**	37.20	3.11	40.31	23.00	927.1	48.85
1966†	39.99	3.29	43.28	28.97	1,253.8	61.76
1971†	45.07	3.77	48.84	38.75	1,892.6	83.78

* Assuming existing public programmes and continued transfer of patients from tuberculosis and mental institutions to active treatment hospitals at rate occurring in the period 1957-1961. Per diem costs in 1961 are based on all hospital days including private and federal hospitals.

** Estimated.

† Projected.

SOURCE: Based on Table 14-2; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

TABLE 20-18 ESTIMATED COST OF HOSPITAL CARE IN TUBERCULOSIS AND MENTAL HOSPITALS, CANADA, SELECTED YEARS, 1961-1971*

Year	Mental Hospitals and Institutions for Mentally Retarded				Tuberculosis Hospital Care			
	Days of Care	Cost Per Day	Total Cost	Per Capita Cost	Days of Care	Cost Per Day	Total Cost	Per Capita Cost
	'000,000	\$	\$'000,000	\$	'000,000	\$	\$'000,000	\$
1961	24.74	5.37	132.8	7.28	2.32	12.20	28.3	1.55
1963	25.72	6.15	158.2	8.34	2.18	14.10	30.7	1.62
1966	27.20	7.85	213.5	10.52	1.83	17.87	32.7	1.61
1971	29.71	11.53	342.6	15.17	1.24	23.95	29.7	1.31

* Assuming no change in existing public programmes for hospital care.

SOURCE: Based on Table 14-2; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

¹ Dominion Bureau of Statistics, *Prices and Price Indexes, 1913-1927*, pp. 120-121.

TABLE 20-19 ESTIMATED COST OF HOSPITAL CARE IN ALL HOSPITALS, CANADA, SELECTED YEARS, 1961-1971

Year	Cost of Hospital Care in General and Allied Special Hospitals		Mental Hospital Care		Tuberculosis Hospital Care		All Hospital Care	
	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita
	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$
1961	762.6	41.81	132.8	7.28	28.3	1.55	923.8	50.64
1963	927.1	48.85	158.2	8.34	30.7	1.62	1,116.0	58.81
1966	1,253.8	61.76	213.5	10.52	32.7	1.61	1,500.0	73.89
1971	1,892.6	83.78	342.6	15.17	29.7	1.31	2,264.9	100.26

SOURCE: Based on Tables 20-17 and 20-18.

other hand, during the period 1929-1935, per diem costs changed but little, while from 1936 to 1961 they grew at a trend rate of 7.5 per cent a year and between 1945 and 1961 at a trend rate of 10 per cent a year. What we have projected then is not the higher rate of the post-war period, not the lower rate of growth since 1913, but a rate, 7 per cent, that is close to that experienced in the twenty-five years since 1935. The average per diem costs of adult, children and new-born days of care provided in general and other special hospitals has been projected to increase from \$19.73 in 1961 to \$28.97 in 1966 and \$38.75 in 1971.

Although we have projected that per diem costs will grow more slowly than in the recent past we are aware that our projection leads to a doubling of cost in a decade. We wish, therefore, to examine other evidence to support this projection and particularly to indicate the possible margin of error.

The cost of one day of hospital care is dependent on a wide variety of factors but these can be reduced to a few major categories: the cost of educating health personnel, the cost of medical and operational research, the quantity and quality of health services along with room and board provided for in-patients or out-patients and the wages and salaries paid to the hospital staff who supply such services.

Leaving for the moment the question of future costs of education and research, which have traditionally accounted for a small proportion of total hospital costs, per diem costs of hospital care will depend on the quantity and quality of services and the wages and salaries of employees. Thus if the average patient obtains more health services, or more personal services of any sort, in a given day; then given the nature of hospital care which makes it difficult to substitute capital for labour, there will be an

increase in labour costs per day and a general increase in per diem costs. Alternatively, if the quality of a given volume of services provided for patients increases, then the qualifications of the personnel providing such services will almost certainly have increased, and in turn this will enable them to command a higher salary commensurate with their greater amount of training and experience and again per diem costs will rise. As we indicated in Chapter 11, these trends have been operating in the past and, as a consequence, wages and salaries now account for close to 70 per cent of average per diem costs and have been pushing up per diem rates at a relatively high rate since the end of World War II.

In our projection of per capita GNP in *current* dollars we have suggested that between 1961 and 1971, the trend rate of growth of per capita income would amount to about 5 per cent a year.¹ Now even if there were no increase in the productivity of skilled hospital workers and the quality of output remained constant there would be some increase in the salaries of hospital employees in order to maintain a labour force. Where other sectors of the economy are experiencing an increase in demand and productivity increases, and paying higher incomes, then an industry which wishes to maintain a labour supply will be forced to increase salaries and wages if it is to survive. Nor is it only higher wages that are significant. As other industries reduce the length of the work-week and provide longer holidays, so industries that must operate 24 hours a day, seven days a week, will have to pay more to induce people to forego the convenience of working in industries that do not maintain such terms of employment. Because of the immobility of many workers already in an industry and the possibility of attracting personnel from other low-wage areas, an industry may survive for a time with wages substantially below those of other sectors of the economy—but likely at the price of operating with an inefficient labour force, with very low productivity. In the long run, older workers will retire, workers from other areas will no longer be forthcoming as they remain at home or migrate to other regions and the end result is an industry that cannot compete or do the job required by the community. It will then either disappear or, if a public responsibility, will have to engage in a costly crash programme to produce the skilled labour force needed and to pay them accordingly.

In view of the importance attached to hospital care by all Canadians it is evident that such a state of affairs should not be allowed to develop. We are assuming that wages and salaries in hospitals, and with them per diem costs, will rise over the decade 1961-71. The question remains, however, rise by how much? Will they rise by less, more or at the same rate as per

¹ Assuming 4 per cent unemployment and an annual average increase in productivity of 2.75 per cent.

capita incomes? Here it is necessary to refer to the quality and variety of services provided in hospitals since these will influence the educational and technical qualifications of personnel and thus their cost.

A number of factors lead us to believe that the rate of increase will be at least equal to and possibly exceed the trend rate of growth of per capita income. The first is the shift of population, and with it hospital care, to larger centres of population and to bigger hospitals. Since wages and salaries are higher in urban areas, this would cause labour costs to rise more rapidly which would be further intensified by the propensity of large hospitals to employ more highly qualified staff. Second, the changes in medical technology seem to carry with them, the need for more highly skilled personnel to operate equipment, to assist in operations, to supervise the complex teams providing nursing and other types of care. Third is the growing tendency to add new functions to hospitals such as psychiatric social work, medical social work, hospital based home care programmes, medical economics, computer analysis of records, etc., all of which again require highly qualified personnel. Finally, the highly individualistic nature of hospital care where few patients present the same symptoms, and where the sick appear to desire people and not gadgets, operate against the wide-spread substitution of machines for human beings in these complex situations. Some substitution of capital for labour has taken place, and will continue to do so, as will the substitution of less skilled for more skilled employees through specialization of function, both of which tend to prevent per diem labour costs from rising. Intensive treatment units have been developed—but the cost saving aspects of this development are, as yet, uncertain. Computers are developed which automatically record temperatures and bedside signals call nurses from their stations, but neither have indicated that technology has progressed sufficiently to bring about a major change in the trend over the near term.

One final point may be made here. It has been suggested that by segregating patients in short-stay and long-stay hospitals, the per diem cost of hospital care could be reduced. Since the room and board of a patient is relatively constant wherever he is housed, the cost reduction must come about through the reduced amount of expensive service provided in a short-term hospital. Such savings may be illusory, however, unless accompanied by a policy which prevents hospital beds from filling up with "unnecessary" active treatment patients when chronic and convalescent patients are removed. Indeed the treatment of chronic and convalescent patients in active treatment hospitals has kept the per diem cost of hospital care down rather than raised it. In 1961, the average per diem cost of short-term hospital care in the United States was \$36.83 compared with an average cost of \$19.73 in Canada. Part of this difference was the result of the manner in which the two figures were calculated and the general higher level of incomes in the United States, but a substantial part of the difference was the result of the American custom of

caring for many chronic patients in proprietary nursing homes where the lower average per diem costs cannot affect the cost of care in short-term hospitals.¹ Because long-stay patients in Canadian hospitals generally receive much less diagnostic services, and are often cared for by student nurses and nursing aides under the direction of registered nurses the cost of care is relatively low and pulls down the average for all patients. If such patients were removed, the per diem costs of those remaining would rise and if beds filled up with more intensive treatment patients the number of patients with high per diem costs would also increase.

In view of the opportunities for advanced education and the alternative occupations available for Canadians with the skills and ability required in hospitals subject to rapid scientific and technological change, along with the improvement in salaries and working conditions in other Canadian industries and in those countries from which Canada has traditionally either drawn hospital staff or to which it has lost them, it does not seem unreasonable to project that salaries and wages of hospital staff will rise at a trend rate of 4 to 5 per cent a year over the decade.

Per diem costs will rise, not only because salaries of staff rise, but because in-patients and out-patients, on the average, will continue to receive more care in a given day. Part of this increase will be covered by improved productivity of existing staff and which is reflected in the projected increase in salary, but part will still have to be provided by new staff with new skills and this trend will become increasingly strong if hospitals become the institution responsible for organizing community health care.

In addition to these factors which will raise the per diem costs of hospital care, the trend to educate more health personnel in hospitals and to develop medical research in university oriented hospitals will raise costs even further in the future. Our recommendations relating to the payment of university medical personnel working in hospitals will transfer costs from education to hospital care. The establishment of a two-year education programme for nurses will, in the short run, raise the cost of education as well as the cost of patient care; as will the development and expansion of in-hospital training for technologists, medical librarians and other personnel. Increased payments to interns and residents will also be reflected in higher hospital costs. Over the long run, the increased supply of personnel and the benefits of medical research should prevent salaries from rising too rapidly and permit more care to be provided by a given number of personnel. In the short run, the most likely result is to increase quality of care resulting in increased per diem costs.

¹ The Canadian figure is based on all patient-days and includes chronic and convalescent hospitals. The American figure is based on adult-days and children-days only and includes only short-stay hospitals.

Taking into account the prospective increases in the price of food, new drugs, and other supplies used in hospitals, though these are likely to rise much less than labour costs, a projected increase of 7 per cent a year is well within the bounds of probability.¹ Projections of the cost of hospital care in the United States all tend to support this. Thus in 1961, a Columbia University study relating to the cost of hospital care in active treatment hospitals in New York projected that within 5 years the cost of semi-private care in short-term hospitals in that city would rise to \$68 a day.² Another projection for New York City hospitals suggests that the per diem costs of voluntary hospitals would rise by annual average rate of about 7 per cent in the period 1960-1965 and by 5 to 8 per cent in municipal hospitals and this from a level which had long surpassed average per diem costs in Canada.³

In choosing 7 per cent we believe that this is the *upper limit* to the increase in cost and that there is an excellent chance that costs may rise at a lower rate, particularly in the second half of the decade as organizational and other innovations improve the efficiency of hospital operation. Thus if per diem costs rise at a rate of 6 per cent instead of 7 per cent, the cost of a day of hospital care in 1971 would be \$35.50 instead of \$38.75—a reduction in cost of \$159 million. If in the less likely event the rate of increase were to be kept down to 5 per cent, the reduction in cost would be \$329 million, more than sufficient to finance the additional costs of a medical care and a Children's Dental Programme.

We have, in our recommendations, suggested that funds be made available for research into the operation of the hospital industry in order to ensure that the benefits of efficient operation are realized. It would, however, be unrealistic to assume that expenditures can be prevented from rising without serious damage to the high quality of Canadian hospital care with all that this implies for other health services. Registered nurses may be earning \$5,750 a year in 1971 but this will not be a high salary compared to the general level of incomes at that time.⁴ In the past, since hospital care was no more than custodial care, it could operate with staff who were paid among

¹ Given the trend as projected above, regard should be given to the efforts made by some provincial administrations trying to keep cost increases of the existing level of services to a rate of 3 per cent per annum.

² See State of New York, *Report of the Joint Legislative Committee on Health Insurance Plans*, 1961, p. 76.

³ See Klarman, H. E., *Analysis of Increase in the Cost of Hospital Care*. Unpublished paper presented to the Conference on the Economics of Health and Medical Care, The University of Michigan, May 1962.

⁴ If a registered nurse was paid a salary of \$290 a month in 1961 and received an annual increase of 5 per cent a year, in 1971 she would be earning \$5,675 a year in salary. With additional earnings in the form of "fringe benefits" such as pensions, hospitalization, and medical insurance her income could well exceed \$5,750. In fact, we have suggested that in order to attract a sufficient number of dental auxiliaries they may require a salary of \$6,500 per annum by 1971. Registered nurses may have to be offered similar salaries if the two professions are to be equally attractive to young women considering a career in the health services field.

the lowest incomes of any in the country. In the future the price will have to be paid for high quality care. In an open economy like Canada's, failure to pay the price required to obtain the skilled personnel needed will not necessarily result in the continuing underpayment of any group of workers for the benefit of the community as a whole. Rather it may bring about a transfer of workers to other more productive industries or increased emigration to other countries particularly the United States where salaries may be more in keeping with the investment in human capital.

The volume of care provided in tuberculosis hospitals, mental hospitals and institutions for the mentally retarded has been projected in Chapter 14 and is shown in Table 20-18. The trend rate of growth of days of care in mental institutions has been projected at 2 per cent a year, the same as the growth of population, while for care provided in tuberculosis institutions the projection is one of a substantial decline. Increased expenditures on this type of hospital care will depend, therefore, on the projected rate of growth of per diem costs. These, in the post-war period, have increased at about the same rate as the cost of care in general hospitals but given the nature of care, have remained at a lower level. Our projection is that the cost of care in tuberculosis hospitals will rise at the same trend rate of growth as per diem costs in active treatment hospitals; from \$12.20 in 1961 to \$23.95 in 1971. Our projection for mental institutions is that per diem costs will rise somewhat more rapidly as the quality and volume of care in mental institutions are improved. At a trend rate of growth of 8 per cent, per diem costs are projected to rise from \$5.37 in 1961 to \$11.53 in 1971. The projected cost of hospital care assuming no change in the trend of hospital care for the mentally ill is set out in Table 20-19. In 1966 it is estimated that the total cost will amount to \$1,500 million; of which tuberculosis hospital care will cost \$33 million, mental hospital care \$213 million, and care in general and allied special hospitals \$1,254 million. By 1971 it is projected that tuberculosis hospital care will cost \$30 million; mental hospital care, \$343 million, and general and allied special hospital care \$1,893 million for a total outlay of \$2,265 million. In these projections the per capita cost is projected to double in the decade from \$50.64 in 1961 to \$100.26 in 1971.

PROJECTED EXPENDITURES ASSUMING MORE RAPID INTEGRATION OF MENTAL HOSPITAL CARE INTO ACTIVE TREATMENT HOSPITALS

The transformation of mental hospital care from long-term custodial care to shorter-term active treatment hospitals is projected to lead to an absolute decline in the volume of hospital care—a reduction of 600,000 days of care from that projected without this programme. Such a reduction cannot be achieved without cost and the cost is the more expensive

diagnostic, treatment and rehabilitation services provided in public general hospitals. We have therefore projected the cost of psychiatric care in general hospitals to rise at the same rate as other types of care while other hospital care, provided for those remaining in mental hospitals and for mentally retarded children in residential institutions and rehabilitation centres, is projected to increase at the same rate as the cost of mental hospital care in our previous projection—8 per cent. Table 20-20 gives the projected cost of hospital care for the mentally ill; \$204 million in 1966 and \$351 million in 1971. The total cost does not differ significantly from our previous projections but it is evident that the type of care provided has substantial economic and social benefits as individuals are returned to the community. Further benefits could be expected as the population of mental institutions declined even further in the next decade.

The total cost of hospital care in this programme is indicated in Table 20-21. From \$924 million in 1961, expenditures are projected to increase to \$1,490 million in 1966 and to \$2,274 million in 1971. Again per capita costs are projected to double from \$50.64 in 1961 to \$100.64 in 1971. The trend rate of growth of total spending in the decade is shown in Table 20-22. During the decade 1951-1961 this was 11 per cent a year, rising to 11.8 per cent a year in the quinquennium 1956-1961. The trend rate of growth is projected to decline slowly over the next decade to 10.1 per cent in 1966 and to 8.8 per cent in 1971. For the whole decade the trend rate of growth projected is 9.4 per cent. These rates of growth are high but, to a large extent they carry with them extended life and reduced disability and pain. Opportunities for economy exist and should be grasped wherever possible, but if we are to benefit from scientific progress, we must be prepared to pay for such advances.

Projected Expenditures on Other Health Services

Expenditures on other health services include outlays for optometrists' services, prescription glasses, services of chiropractors, osteopaths and podiatrists,¹ home nursing care and prosthetic appliances. The limited nature of the data available necessitate projecting expenditures for this whole complex of services on the basis of post-war trends. In the period 1945-1961 it is estimated that the average annual percentage increase in such expenditures amounted to 10 per cent. It is not likely, however, that a similar rate of growth will be achieved over the decade 1961-1971. Assuming no change in the scope of public and private prepayment plans, many of these services will not be covered by premiums and demand therefore will be limited. Technological change also should limit the increase in the price of glasses.

¹ We deal with chiropractors, osteopaths and podiatrists in Volume II.

TABLE 20-20 ESTIMATED COST OF HOSPITAL CARE FOR THE MENTALLY ILL, ASSUMING THE EXPANSION OF PUBLIC PROGRAMMES, CANADA, 1966 AND 1971

Year	Care Provided in Mental Hospitals, Residential Schools and Rehabilitation Units for the Mentally Retarded and Additional Psychiatric Care in Public General Hospitals										
	Psychiatric Care in Public General Hospitals*			Mental Hospital Care			Residential and Rehabilitation Units**			All Mental Hospital Care	
	Days of Care	Cost Per Day	Total Cost	Days of Care	Cost Per Day	Total Cost	Days of Care	Cost per Day	Total Cost	Total	Per Capita
	'000,000	\$	\$'000,000	'000,000	\$	\$'000,000	'000,000	\$	\$'000,000	\$'000,000	\$
1966	.95	28.97	27.5	16.43	7.85	129.0	6.00	7.85	47.1	203.6	10.03
1971	2.90	38.75	112.4	12.32	11.53	142.0	8.40	11.53	96.9	351.3	15.55

*Excludes psychiatric care provided in public general hospitals without an expanded public programme. This amounted to 400,000 days in 1961 and is included with public general hospital care.

**Includes infirmaries for children with an I.Q. of 1-50 and residential schools for the education of children preparatory for their return to the community.

SOURCE: Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964; and Table 14-3.

Finally without a major change in the practice of medicine and the use of hospitals, the growth of home nursing services is unlikely to be substantial for some years to come. We have projected that the growth rate of spending on these health services will grow at a trend rate of 8 per cent a year in the quinquennium 1961-1966, and a rate of 5 per cent a year for the whole decade. Table 20-23 indicates the projected amounts. Assuming existing programmes, it is estimated that expenditures on "other" health services will amount to \$145 million in 1966 and \$170 million in 1971, or \$7.14 and \$7.53 per capita.

TABLE 20-21 ESTIMATED COST OF HOSPITAL CARE ASSUMING DEVELOPMENT OF A PROGRAMME FOR THE TREATMENT OF THE MENTALLY ILL IN PSYCHIATRIC HOSPITALS AND INSTITUTES FOR THE MENTALLY RETARDED, CANADA, SELECTED YEARS, 1961-1971

Year	Cost of General Hospital Care	Cost of Tuberculosis Hospital Care	Cost of Hospital Care for Mentally Ill	Total Hospital Care	
				Total	Per Capita
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$
1961	762.6	28.3	132.8	923.7	50.64
1963	927.1	30.7	158.2	1,116.0	58.81
1966	1,253.8	32.7	203.6	1,490.1	73.40
1971	1,892.6	29.7	351.3	2,273.6	100.64

SOURCE: Based on Tables 20-19 and 20-20.

TABLE 20-22 AVERAGE ANNUAL PERCENTAGE CHANGE IN EXPENDITURE ON HOSPITAL SERVICES, CANADA, SELECTED PERIODS, 1951-1971

Period	Percentage Change in Total Spending	
	Assuming No Change in Programme	Assuming Expansion of a Programme for the Mentally Ill
1951-1956.....	10.2	—
1956-1961.....	11.8	—
1951-1961.....	11.0	—
1961-1966.....	10.2	10.1
1966-1971.....	8.5	8.8
1961-1971.....	9.4	9.4

SOURCE: Based on Tables 11-1, 20-19 and 20-21.

TABLE 20-23 ESTIMATED EXPENDITURES ON PERSONAL HEALTH SERVICES ASSUMING EXISTING PROGRAMMES AND WITH EXPANDED PUBLIC PROGRAMMES, CANADA, SELECTED YEARS, 1961-1971

Year	Expenditures on Physicians' Services		Expenditures on Dentists' Services*		Expenditures on other Health Services**		Expenditures on Prescribed Glasses		Expenditures on Admin. Costs of Health Insurance†			Expenditures on Prescribed Drugs		Sub-Totals Health Services		Expenditures on Hospital Services		Total Operating Costs of Hospital and Other Health Services	
	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita	Total	Per Capita	
	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	\$'000,000	\$	
	Assuming Existing Programmes																		
1961	383.2	21.01	118.8	6.51	115.0	6.30	—	—	71.6	3.93	111.5	6.11	800.1	43.86	923.8	50.64	1,723.9	94.50	
1963	427.9	22.54	134.8	7.10	125.0	6.59	—	—	79.0	4.16	127.4	6.71	894.1	47.10	1,116.0	58.81	2,010.1	105.91	
1966	505.7	24.91	162.5	8.00	145.0	7.14	—	—	95.0	4.68	153.5	7.56	1,061.7	52.29	1,500.0	73.89	2,561.7	126.18	
1971	649.0	28.72	214.2	9.48	170.0	7.53	—	—	116.0	5.14	203.0	8.98	1,352.2	59.85	2,264.9	100.26	3,617.1	160.11	
	Assuming Expanded Public Programmes																		
1966	525.3	25.88	162.5	8.00	140.0	6.90	28.9	1.42	95.0	4.68	234.3	11.54	1,186.0	58.42	1,490.1	73.40	2,676.1	131.82	
1971	797.1	35.29	271.3	12.01	170.0	7.53	18.2	0.81	116.0	5.14	360.7	15.97	1,733.3	76.75	2,273.6	100.64	4,006.9	177.39	

* Assuming introduction of a children's dental care programme in 1968.

** Includes estimated expenditure on prescribed glasses for total population assuming existing programmes. Excludes expenditures on prescribed glasses for children and recipients of public assistance upon introduction of a public programme. Includes expanded home nursing programme and prosthetic devices programme after 1965.

† Assumes that expansion of administrative costs of public health insurance and operational research expenditures will be offset by decline in expenditures for the administration costs of private health, accident and sickness insurance.

Source: Tables 11-1, 20-6, 20-8, 20-10, 20-14, 20-15, 20-19, and 20-21; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services Ottawa: Queen's Printer, 1964.

Our recommendations relating to other health services have been the introduction of a programme providing prescription glasses for children and recipients of public assistance, the provision of prosthetic devices and the development of a programme of home nursing care. The first of these has been outlined earlier in this chapter and the estimated cost of the programme has been shown in Table 20-23. The cost of an expanded home nursing programme and prosthetic devices has not been calculated separately but is included in expenditures on other health services assuming expanded public programmes. It will be noted in Table 20-23 that these figures are approximately the same as projected expenditures without a programme; \$140 million and \$170 million compared with \$145 and \$170 million respectively. This is equivalent to assuming that the *additional* costs of home nursing care and prosthetic devices on the introduction of the programme would be offset by the reduction of spending on prescribed drugs which otherwise would be included in this figure. It is evident that this is not a substantial increase in spending but the development of a home nursing programme will result in the reduction of some hospital care so that funds now included in the hospital care projection would be available to finance an expanded home care programme. The additional cost of prosthetic appliances would be relatively small.

Administrative Costs of Health Insurance

During the post-war period the rapid increase in the extent of private prepayment plans for health services and the introduction of the national Hospital Insurance Programme in 1957 led to a substantial growth in administrative costs, although these remained a relatively small proportion of total health spending. Without an expansion of public programmes and with the more wide-spread use of data-processing equipment, the growth of such spending is projected at a lower rate for the decade 1961-1971; 5 per cent a year on the average. An expansion of individual health contracts might increase this rate of growth by 1 or 2 per cent since the selling costs associated with such contracts are high, but this would not change substantially total outlays in this area.

With the introduction of a comprehensive public programme for medical care, children's dental and other programmes recommended in this Report, there will, no doubt, be some shift in the outlays for administrative costs between the private and the public sector. Since this will depend on the nature of programme in each province we have assumed that there will be no change in the relative cost of administration, any reduction in costs being offset by increased expenditures for operational research aiming at making the most efficient use of available health resources.

The estimated cost of administration is set out in Table 20-23. Total costs are projected to rise to \$95 million in 1966 and to \$116 million in 1971, or to \$4.68 and \$5.14 respectively. In view of the total projected expenditures of \$2.7 billion and \$4.0 billion in 1966 and 1971 (assuming expanded public programmes), the projected administrative costs are less than 4 per cent of total spending, an estimate that does not appear to be on the high side.

Projected Expenditures on All Personal Health Services

The expenditures on personal health services projected for the decade 1961-1971 is shown in Table 20-23. Assuming no change in current public programmes total spending on such services is projected to increase from \$1,724 million in 1961 to \$2,562 million in 1966 and \$3,617 million in 1971, while per capita expenditures are projected to rise from \$94.50 to \$126.18 and \$160.11 respectively.

If the programmes we recommend can get under way by 1966, the projected level of spending in that year is \$2,676 million and in 1971 \$4,007 million. Per capita spending would amount to \$131.82 in 1966 and to \$177.39 in 1971. The additional cost of expanded health programmes for personal health care would be \$5.74 per capita in 1966 and \$17.28 in 1971, an increase of about 5 per cent in 1966 and 11 per cent in 1971.

As we pointed out earlier this projection is based on an estimated increase in the per diem costs of hospital care of 7 per cent a year. If this projection were to prove too high, as well it may if changes in new methods of caring for the sick are introduced, then to a significant extent the additional costs of public medical, dental and other programmes would be offset by lower hospital costs. For example, if per diem costs of hospital care rose by 6 per cent instead of 7 per cent a year over the period 1961-1971, total per capita spending on personal health services would fall by about \$5.50 in 1966 and about \$7.00 in 1971. In the first instance this would amount to almost the whole of the additional per capita cost arising from the introduction of new programmes; in the second case it would amount to 40 per cent.

The changing pattern of consumer expenditures on health services that we described in Chapter 11 is taken into account in making our projection into the future. Table 20-24 indicates the manner in which consumers are expected to allocate their spending with hospital services accounting for the largest share of each dollar followed by physicians' services, dentists' services, prescribed drugs, other health services and the administrative costs of health insurance. Assuming no change in current public programmes it is projected that the proportion spent on hospital care will rise to 58.6 per cent in 1966 and 62.6 in 1971 while the percentage spent on all other personal health services, inclusive of prescribed drugs, is projected to decline.

In view of the limitations, in the short run, on expanding the supply of physicians and dentists, and the trend to substitute hospital care for the relatively scarce physician that we have already noted, it is not surprising that hospital expenditures are projected to grow more rapidly. Further, the fact that hospital care is the sole health service now available to all Canadians without any serious financial deterrent implies that the demand for such care will remain at a high level relative to other services that are not part of a public programme.

The situation is somewhat different if the programmes we have recommended in Chapter 2 come into operation by 1966. As shown in Table 20-24, assuming expanded public programmes, hospital care continues to account for a larger share of the consumer dollar spent on personal health services, 56.8 per cent in 1971, (62.6 per cent).¹ Physicians' services would account for 19.9 per cent (17.9 per cent) and dentists' services 6.7 per cent (5.9 per cent). Expenditures on other health services including prescribed glasses, etc., would represent 4.7 per cent (4.7 per cent) and administrative costs of health insurance would amount to 2.9 per cent (3.2 per cent). With the introduction of a public programme for prescribed drugs, expenditures on this item would rise notably, accounting for 9 per cent of total spending in 1971 (5.6 per cent).

Health Expenditures by Public Authorities

Projected expenditures on public health, as shown in Table 20-4, include expenditures for a wide variety of services by all levels of government. Included are the administration of health departments, environmental sanitation, the control of radiation hazards, accident prevention, the control of communicable diseases, public health nursing, health education, school dental services, control of alcoholism, care finding for chronic disabilities, the training of personnel, health and statistical research and many other functions.

Our projection, assuming no change in the level and content of public programmes is that this class of spending will rise at a trend rate of growth of about 6 per cent in the decade 1961-1971, increasing at a rate of 7.5 per cent in the first half of the decade and about 5 per cent in the second half. This is somewhat less than the growth rate of the post-war period which averaged 11.2 per cent but is not significantly less than the growth rate of the quinquennium 1957-1961 which amounted to 7.4 per cent. This projection results in total spending rising from \$105 million in 1961 to \$150 million in 1966 and \$190 million in 1971. Per capita expenditures rise from \$5.76 to \$8.41.

¹ Figures in brackets relate to the proportion in 1971 assuming no expanded public programme.

TABLE 20-24 PERCENTAGE DISTRIBUTION OF ESTIMATED EXPENDITURES ON PERSONAL HEALTH SERVICES,
BY TYPE OF EXPENDITURE, CANADA, SELECTED YEARS, 1961-1971

Year	Physicians' Services	Dentists' Services	Other Health Services	Prescribed Glasses, etc.*	Administrative Costs	Prescribed Drugs	Hospital Services	Total Expenditures
			Assuming Existing Programmes					
1961	22.2	6.9	6.7	—	4.2	6.5	53.6	100.0
1963	21.3	6.7	6.2	—	3.9	6.3	55.5	100.0
1966	19.7	6.3	5.7	—	3.7	6.0	58.6	100.0
1971	17.9	5.9	4.7	—	3.2	5.6	62.6	100.0
			Assuming Expanded Public Programmes					
1966	19.6	6.1	5.2	1.1	3.5	8.8	55.7	100.0
1971	19.9	6.7	4.2	0.5	2.9	9.0	56.8	100.0

*Includes expenditures on prescribed glasses, home nursing care and prosthetic devices.

SOURCE: Based on Table 20-23.

On the assumption that the programmes we have recommended are in operation by 1966 some of the expenditures, now included as part of public health expenditures, would be included in other categories of health spending. Thus research and health education grants would be included in these particular categories while school dental and eye care services would be included in the cost of these particular programmes. On the other hand, there will be still a growth of spending in such areas as environmental sanitation, air and water pollution and many other areas. In these circumstances we have felt, on the basis of the evidence available, that it was not possible to re-allocate public health expenditures and we have assumed that public health expenditures will be the same without or with a change in public programmes. This has the effect likely of over-estimating to some extent the cost of health services in the latter case.

Projected Expenditures on Health Capital

EXPENDITURES ON HOSPITAL FACILITIES

Projected expenditures on hospital facilities have been based on the projected supply of hospital beds as described in Chapter 14. In 1966, it is estimated that in order to meet the needs of a growing population, to provide psychiatric care in general hospitals and to replace obsolescent facilities, 6,625 beds and 570 bassinets must be constructed in general hospitals along with 1,000 beds in institutions for the mentally retarded. In 1971, the numbers to be built are 6,870, 800 and 1,500 respectively.

Expenditures on General Hospital Facilities—Having in this manner estimated the total number of beds to be built, expenditures on hospital capital will depend on the projected cost of providing these hospital beds. It must be recognized in this context that a hospital bed is more than just the provision of space for a patient. Indeed a hospital bed is a surrogate for a whole complex of facilities ranging from space in a public ward to a residence for interns or nurses; from an out-patient department to an operating room; from a pathology laboratory to a university medical research department. In these circumstances the average cost of a hospital bed will depend on the facilities associated with the bed. In a hospital for long-stay patients the average cost per bed will be substantially lower than in a hospital which is part of a university teaching hospital with a full complement of research and educational facilities. The influence of these requirements are indicated in the range of average cost of a hospital bed which varied from \$9,000 to \$25,000 in 1961.¹

¹ See Department of National Health and Welfare, *Canada's Health and Welfare*, Ottawa: Queen's Printer, March 1961.

In view of this wide variation of costs, the projected average cost of a general hospital bed over the decade 1961-1971 can only be presented in the form of a reasonable approximation. There will be increases in cost associated with a rise in the general level of prices but the most significant factor contributing to the increase in costs of a hospital bed will be the greater average size of hospital. The larger the hospital, the greater the volume of ancillary services provided and education and research undertaken. Offsetting these increases to some extent could be the increased productivity of the hospital construction industry. The latter, however, will depend on the continued ability of the industry in adapting mass production techniques to the construction of facilities which often must be custom-built. In view of these developments, in Table 20-25, we have projected that the average cost of building a hospital bed will rise from \$18,000 in 1962-1963 to \$20,000 in 1966 and to \$24,000 in 1971, an annual average increase of 3.7 per cent over the eight-year period.¹ The cost of a bassinet is projected to rise to \$6,600 and to \$8,000 in 1966 and 1971 respectively.² Multiplying the projected average cost by projected bed requirements it is estimated that by 1966 the cost of new facilities in general hospitals would amount to \$132.5 million and in 1971 to \$164.9 million.³

Expenditures on Facilities for the Mentally Retarded—Since new buildings for the care of the mentally ill have been included in the projected cost of general hospital facilities, the remaining facilities to be built are residential schools and training institutions for the mentally retarded. Since such institutions will not require the facilities available in general hospitals, the cost per bed has been projected at \$7,500 in 1966 and \$10,000 in 1971 for a total expenditure of \$7.5 million and \$15 million respectively.

Total Expenditures on Hospital Facilities—As shown in Table 20-25, the total cost of construction for hospital facilities is projected at \$143.8 million in 1966 and \$186.3 million in 1971; the equivalent of \$8.27 and \$9.31 per capita. These sums are not greater than the per capita outlays of the decade 1953-1963,⁴ but this is to be expected since in that period, hospital facilities were built in order to meet the needs of a rapidly expanding Hospital Insurance Programme.

¹ The estimated cost of 1963 has been calculated by constructing a weighted average of hospital construction costs as reported in *Hospital Administration in Canada*, January 1962 to June 1963.

² See Department of National Health and Welfare, *Canada's Health and Welfare*, *op. cit.* For purposes of determining the share of the Federal Government in the costs of new constructions, bassinets are valued at one-third of the cost of a hospital bed.

³ See Table 20-25.

⁴ See Table 11-5.

TABLE 20-25 ESTIMATED EXPENDITURES ON HOSPITAL FACILITIES, CANADA, 1966 AND 1971

Year	Beds and Cribs in General Hospitals			Bassinets			Beds in Residential and Training Institutions for the Mentally Retarded			All Expenditures	
	Number of Beds to Be Built	Average Cost Per Bed	Total Expenditures	Number of Bassinets to Be Built	Average Cost per Bassinet	Total Expenditures	Number of Beds to Be Built	Average Cost Per Bed	Total Expenditures	Total	Per Capita
1966*	6,625	\$ 20,000	\$ '000,000 132.5	570	\$ 6,600	\$ '000,000 3.8	1,000	\$ 7,500	\$ '000,000 7.5	143.8	8.27
1971*	6,870	24,000	164.9	800	8,000	6.4	1,500	10,000	15.0	186.3	9.31

*Projected.

SOURCE: Based on Table 14-6; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

EXPENDITURES ON ALL CAPITAL FACILITIES

In addition to expenditures on hospital construction, the development of health services projected for the decades 1961-1971 implies that there must be an expansion of educational facilities for health personnel, clinics and mobile equipment for the children's dental service, as well as the construction of office and laboratory space for private physicians. We have made an estimate of expenditures on medical schools, dental schools, university nursing schools and facilities for the expansion of dental services and these are presented in Table 20-26.

On the basis of the expansion of medical schools, dental schools, and schools of nursing recommended in Chapter 13, the cost of such facilities in 1966 is projected to amount to \$17 million and to \$21.5 million in 1971. The estimated cost of establishing facilities for the training of dental auxiliaries is \$7 million in 1966 as the programme gets under way and \$2.5 million for expansion in 1971. The total expenditures on capital facilities is estimated to amount to \$168 million in 1966 and \$210 million in 1971, or to \$8.27 and \$9.31 per capita.¹

TABLE 20-26 ESTIMATED CAPITAL EXPENDITURES BY TYPE OF CONSTRUCTION, CANADA, 1966 AND 1971

Year	Hospital Construc- tion	Medical Schools	Dental Schools	Nursing Schools	Capital Outlay for Expansion of Dental Services	Total Expenditures	
						Total	Per Capita
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$
		Assuming Expansion of Public Programmes					
1966*	143.8	10.0	5.0	2.0	7.0	167.8	8.27
1971*	186.3	10.0	8.0	3.5	2.5	210.3	9.31

* Projected.

SOURCE: Based on Table 20-25; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

Expenditures on Grants-in-Aid of Education

Chapter 2 indicates the recommendations made to ensure that sufficient personnel will be available to provide the level of service we believe to be adequate in the decade ending 1971. The expenditures arising from these recommendations are set forth in Table 20-27 and amount to \$24.7 million in 1966 and to \$26 million in 1971, or \$1.22 and \$1.15 per capita.

¹ See Table 20-26.

TABLE 20-27 ESTIMATED GRANTS-IN-AID TO EDUCATION, CANADA, 1966 AND 1971*

Year	Undergraduate Medical Education			Undergraduate Dental Education			Undergraduate Nursing Education			Dental Auxiliary Training Programme†† Total Cost	Other Personnel ^a Total Cost	Post-Graduate Education ^b Total Cost	Federal Grants to Univ. for the Education of Health Personnel ^c	All Expenditures	
	Number of Students	Grant per Student	Total Cost	Number of Students	Grant per Student	Total Cost	Hospital Schools of Nursing** Total Cost	Nursing Education in Universities† Total Cost	Total					Per Capita	
		\$	\$ '000,000		\$	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$ '000,000	\$	
				Assuming Expanded Public Programme											
1966 ^d	2,000	2,000	4.0	500	2,000	1.0	—	1.0	—	5.0	.5	3.0	10.2	24.7	1.22
1971 ^d	2,000	2,000	4.0	600	2,000	1.2	—	1.0	—	5.0	.5	3.0	11.3	26.0	1.15

*Includes *only* estimated additional costs arising from the recommendations of the Commission. Does not include grants for education already made and included as National Health Grants in Expenditures on Public Health or other grants-in-aid of education made by the provinces, municipalities or individuals. This latter amount is not available.

**Included in estimated cost of hospital care, Table 20-21.

†Estimated amount for bursaries.

††Includes operating costs of schools for dental auxiliaries and maintenance bursaries.

‡Estimated bursaries for other health personnel.

^aExcludes expenditures on postgraduate education included in research expenditures. Amount available for medical, dental, and nursing postgraduate education.

^bGrants to universities with medical, dental, nursing and other schools educating health personnel to assist in the costs of operation associated with the expansion of educational facilities. Grant is 50 cents per capita in each province.

^cProjected.

SOURCE: Data from Chapter 13; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964

The cost of bursaries for nursing education provided in hospitals is included in the cost of hospital care. The cost of undergraduate education for physicians, dentists and nurses is based on the number of students projected to be receiving their education in the years when bursaries are made available and the size of grant made. For these categories of professional personnel it is estimated that expenditures on bursaries would amount to \$6 million in 1966 and to \$6.2 million in 1971. Projected bursaries for the education of other health personnel amount to \$0.5 million in both years. In addition, since universities will have to face additional costs arising from the expansion of educational facilities, we have recommended earlier that a grant of 50 cents per capita be made by the Federal Government to each of the provinces to assist in this operation. The cost of this grant is estimated to be \$10.2 million in 1966 and \$11.3 million in 1971. The capital costs of schools for training dental auxiliaries for the children's dental care programme have been included in projected capital costs outlined above. The operating costs of such establishments have been projected at \$5 million a year down to 1971. Finally the costs of post-graduate education, other than that associated with research expenditures, has been projected at \$3 million a year in this period. This includes the expenditures on medical, dental and nursing post-graduate education.

SUMMARY OF PROJECTED TOTAL HEALTH SPENDING

We have examined past trends in health spending and we have projected future trends in spending. In so doing, where it has been desirable to develop alternative projections, we have not generally accepted the lower estimate of future spending. Indeed, where there was a probability that a lower growth of spending might be realized, as in the case of expenditures on hospital care, we have used the higher rate of growth in our projections.¹ Yet even on the basis of these projections, health expenditures, while growing rapidly, are projected to account for a relatively small proportion of future total output or spending.

For the decade 1961-1971, assuming no change in the scope of public programmes for the provision of health services from that existing in 1961, and assuming that Gross National Expenditure in *current* dollars grows at a trend rate consistent with a level of unemployment of 4 per

¹ Much of the ill-repute into which projections on health spending have fallen has been the consequence of the under-estimate of the cost of the British National Health Service. Benefiting from the experiences of other countries and in view of the knowledge of health spending available today, and more particularly in the light of the amount already being spent on health, we consider the estimates presented here to be realistic.

cent and average labour productivity that grows at 2.75 per cent a year, our conclusion is that the spending on health services and health capital will account for the same proportion of GNE in 1966 as in 1961 (5.4 per cent) and will increase by one-tenth of a percentage point by 1971. If expenditures on health education and health research were included, the percentage of GNE allocated to health would rise only from 5.5 to 5.7 per cent over the decade. Even with a lower projection of GNE, the proportion spent on health rises only from 5.4 to 5.8 per cent and with research and health education still would not exceed 6 per cent. To the extent that hospital expenditures grow at a slower rate than that projected here it is well within the bounds of possibility that the percentage spent on health would be no greater in 1971 than it was in 1961. Nor does the implementation of the programmes we have recommended lead to any substantial increase in the proportion of GNE allocated to health. With a reasonable growth of GNE, in 1966 the *additional* proportion of GNE allocated to health is two-tenths of one per cent and by 1971 amounts to one-half of one per cent. With a slower rate of growth of GNE, the increased proportion allocated to health over the decade is still less than one per cent.

We have emphasized the difficulties that arise in isolating the contributions of real expenditures and price increase to the growth rate of total spending on health services and capital. Taking this into account, for the period 1961-1971, our projections indicate that real health spending as a percentage of GNE will rise by only 0.8 per cent to 6 per cent over the decade, if the level of output grows at a reasonably high rate. This, despite the implementation of the programmes that we have recommended. With a slower rate of growth of GNP, the increase is somewhat greater, rising by 1.2 percentage points to 6.4 per cent of GNP. On the other hand, a more rapid rate of growth of GNP, consequent on a level of unemployment below 4 per cent and a higher level of productivity increase could reduce the percentage of output absorbed by health services to less than 6 per cent.

The further into the future projections are pushed, the less certain we are how close they will be to the actual growth path. We have, however, tried to estimate what the level of *real* expenditures would be over the period 1961-1991, and we have concluded that if total output grows at a reasonably high rate, the proportion of GNE spent on health services and capital is unlikely to exceed 6.6 per cent. At that percentage, which would hold in 1981, each Canadian on the average obtains the equivalent of *double* the amount of health care that was received in 1961. Although in 1961 there were many Canadians receiving less health services than they would have liked to obtain, or should have obtained, the average level of utilization of hospital, medical and other services was fairly high. In projecting, a doubling of real per capita outlays we have allowed not only for an increase in the

quality of service but projected a high level of average utilization as well. In the event that the rate of growth of utilization of health services were to slow down more rapidly than we have predicted, as it might in the nineteen seventies, the proportion of GNE spent on health may not rise above 6 per cent of real GNP and still permit per capita utilization to double by 1991. It is true that, with a slower rate of growth of GNP or GNE, projected *real* expenditures on health could amount to 7.5 per cent by 1986 and only begin to decline below that level by 1991. Here we believe that a lower growth rate of total output would, almost certainly, be associated with a lower growth rate of utilization of health services. In an economy in which output is not expanding rapidly, the choice between having more of one thing and less of something else is made much more explicit. In such circumstances, health expenditures would likely account for a smaller proportion of GNE and perhaps would not exceed 7 per cent. Even this amount would permit spending in real terms to double over the years 1961 to 1991.

Despite the large sums that we expect to see spent on health over the next decade, the proportion of GNE allocated to health spending of all kinds including research and education is unlikely to exceed 6.5 per cent whether measured in current or constant dollars. Over the 30 years to 1991, the proportion is unlikely to exceed 7 per cent and the probability is that it will be closer to 6.5 per cent of real GNE than to 7 per cent.¹

Finally, we must emphasize that all these projections are extrapolations of existing trends. They do not take account, for example, of the effect on expenditures of different methods of providing health care, of the effect of the introduction of fluoridation or a home care programme, or of a different method of education of health personnel. In each of these areas, there is little doubt that improvements can be made which would reduce the cost, and thus the proportion of GNE devoted to health services. The realization of these gains must wait on more research and investigation.

Our conclusions are that, in view of the growth of per capita Canadian incomes, the allocation of 6.5 or even 7 per cent of such income to health services is unlikely to have deleterious effects on our economy. The single most pervasive fact of the last twenty-five years has been the great rise in the real income per capita of Canadians and it has been this increase in real income that has enabled them to spend increasing amounts on health care, while as a proportion of GNE, health spending has remained below 5.5 per cent. We see no valid reason why real per capita income should not continue to rise in the future and thus permit Canadians to increase their spending on health services. Nor does an increase of 1 per cent in the pro-

¹ See Somers, Herman M., and Somers, Anne R., *Doctors, Patients and Health Insurance*, The Brookings Institution, Washington, D.C., May 1961, p. 521, where it is suggested that by 1970, about 7 per cent of the National Income of the United States will be devoted to health.

portion of GNE allocated to health services over the decade 1961-1971 necessarily indicate that other sectors of the economy will be denied the resources they need or that substantial inflationary pressures will be generated.

We pointed out earlier in our Report¹ that the health industry has played a significant role in contributing to the rate of economic growth, both because it provided a demand for labour and capital and because health expenditures are, in a large part, an investment in human capital. Further, there is not likely to be any chronic shortage of domestic savings or of labour over the next decade that would prevent the maintenance of a high rate of growth of income. Again the health industry is expected to provide a growing volume of employment for the available labour force while at the same time expenditures on health continue to play their part in adding to the volume of investment embodied in the labour force. Although we recognize that the general price level will increase because among many other reasons, of increased prices in the health industry; the recommendations that we have made are such as to provide sufficient funds to finance the rate of growth of output we envisage but not of the magnitude to generate waste. At the same time we have recommended that measures be taken to improve the organization of health services and to expand the supply of professional personnel that will help prices from rising in this particular industry as much as they otherwise might have risen.

There are many economic issues of great importance that Canada faces today, but by far the most significant is the maintenance of a high rate of economic growth. In the achievement of this objective, two factors are of crucial importance: the reduction of unemployment to a level below that of the recent past and a high level of investment in physical and human capital. Expenditures on health services, unlike many other expenditures, to a substantial extent, meet these criteria. Health services are part of the service industry to which many look to provide the growth of employment in the future.² Hospital construction is part of the physical investment we require while the use of health services can make a contribution to the investment embodied in human beings. While not all health expenditures are in this last category, a sufficient amount is, including research and educational expenditures, to enable us to suggest that the level of expenditures envisaged here is likely to have a favourable effect on economic growth over the foreseeable future.

Despite the importance of physical capital in producing output, failure to pursue vigorous health—and educational—policies and programmes leads to smaller increases in output in the long run. It is also associated with higher

¹ See Chapter 19.

² See *Report of the Special Committee of the Senate on Manpower and Employment*, Ottawa: Queen's Printer, 1961, p. 4.

public expenditures in the short run as unproductive citizens have to be supported rather than producing a net contribution for society. If resources that could be used to produce health services are idle because they are unemployed the waste is all the more evident.

It is in this context that the projected cost of our recommendations should be viewed. With no change in the scope of health programmes, expenditures on health care will rise as an increasingly rich society ensures that it is able to enjoy the opportunities available and the fruits of its efforts. Without a medical or dental care programme, per capita outlays in current dollars are projected to rise, by \$67 between 1961 and 1971 (provided hospital services are maintained at a high level of quality). The additional cost of our recommendations, \$7 per capita in 1966 and \$17 in 1971, are of such a magnitude that they are unlikely to reduce the volume of savings to a level sufficient to retard capital accumulation or to generate inflation of any sizeable amount.

Over the next decade, even with the expansion of health services envisaged in this Report, the proportion of output or expenditures allocated to the health sector is not substantially larger than what is now being spent and is unlikely to place a heavy burden on the human and physical resources of our country. Even over the longer term, the next thirty years, we believe on the basis of present evidence that health care will not present an unsupportable burden for this country.

We should like to affirm what we have emphasized in Chapter 12, the economic benefits of health services. We have spoken there of the opportunity society where good health is the key to the benefits available in our increasingly wealthy country. These opportunities depend on the acquisition of education and skills as well as health but if these are available to the individual Canadian, whether or not he has the income to purchase them, then he can make his contribution to the growth of output and income which will benefit not only himself, but through his taxes, others in the community. Canadians, with sufficiently high incomes have pointed the way by spending an increasing share of this income on health services.

Our recommendations are such that we wish to speed up the day when all have access to health services that will enable them to make their contribution to Canada's welfare. Low incomes and poor health have been too closely associated for us to ignore the adverse effects on income distribution of chronic illness and disability. Expenditures on good health may well be as efficient a device for equalizing the distribution of income as any subsidy can possibly be. Nor is the cost of the best possible health care overwhelming, and Canada has the resources—let there be no mistake as to that—and the competence to implement a comprehensive Health Services Programme for all her people.

The difference between a comprehensive health care programme such as we recommend in Chapter 2 would involve, by 1971, an additional sum of \$466 million as compared with the \$4,015 million Canadians are likely to spend in any event in that year, or a further 11 per cent.¹ *We sincerely believe that such an additional expenditure which would enable us to make more effective use of the health resources of the country to the benefit of all Canadians would be the most worthwhile investment in the productivity and well-being of the Canadian people that responsible citizens of this country could insist upon.*

¹ In current dollars, see Table 20-4.

Financing of Health Services

In the preceding chapters we have examined the general trends in health expenditures and government expenditures that have operated in the past and we have projected these trends into the future. In so doing we have recognized that changes in the political, social and economic structure of Canada, as well as for most other nations in the world, have been associated with increased public expenditures, and increased public expenditures for health in particular. We have noted explicitly some of the factors associated with this development and we have emphasized the relationships between government outlays on health services and the maintenance of a high level of demand, both private and public in recent years, as well as with the ability of the Canadian people and the economy to provide the resources needed for the expansion of our health services. We have taken into account the growth of the Canadian population and productivity, that is the expansion of the Canadian economy in general, in recommending the development of new programmes and the improvement of existing ones, presented in Chapter 2.

Yet though there can be no doubt that the expansion of a health services programme on the scale we have indicated will not constitute an undue burden on the economy, and indeed will perform the function of increased investment, what we have not done so far is to examine the sources of funds for this development and to assess the implications of financing an expanding health programme largely through public funds.

The studies that have been prepared for us indicate that a substantial expansion of the public sector of the Canadian economy appears to be complementary with a rise in affluence. By the same token the revenue available to governments should also increase to match and to finance the increasing level of public services, including health services. It is not, however, within the scope of our resources and terms of reference to examine the economic effects of government financing in detail. This would call for an extensive inquiry and analysis that is already being carried out by other Royal Commissions in the area of taxation and economic policy.

We are also aware that in Canada's federal structure, the responsibility of the provision of most health services lies in the provincial domain and that provincial governments may choose to finance their share of the cost of health programmes in a variety of ways.

To complete the task entrusted to us we now turn to an examination of the financing of health services. In what follows we have drawn on a special study prepared for us in this area.¹

BALANCE BETWEEN PRIVATE AND PUBLIC EXPENDITURES

It is sometimes said that expenditures made in the public sector are a burden upon the whole economy. It is undoubtedly true that given full employment of resources, the provision of public services utilizes factors of production which would otherwise be used to produce private goods. If there is unemployment, however, expansion of the public sector does not imply a reduction of output of private goods but induces an increase in the total Gross National Product until a high level of employment is reached. The resulting pattern of output then comes to consist of the same level of output of private goods, but a higher level of public goods and services than before. The latter in turn may contribute to an increase in private output. There are complications in that the new pattern of resource use induces changes in private consumption and investment, depending on the methods of financing used, but the basic simplicity of the proposition remains. If there are unused resources, output will be increased if the government puts them to work, and there is no burden on the economy.

If there is a high level of employment and the government increases expenditures, there are many varying effects, depending upon how the increased expenditures are financed. In any event there is a reduction in the proportion of private output to total output. If total output is increasing over time both private and public output can be increased, and this has been a secular trend in the developed countries of the world, with the public sector expanding at a higher rate than the private. Indeed, certain public services are required to permit a high rate of over-all economic growth; an appropriate balance between private and public goods is essential for continuing economic progress.

¹ See Hanson, E., *The Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The funds to finance this expansion of government activities may come from a variety of sources; from the accumulated surpluses of previous years (a fairly rare phenomenon), from the sale of bonds to the general public or from the creation of new money by the sale of bonds to the Bank of Canada. All of these have effects upon the allocation of resources, the supply of labour and capital, the distribution of income, the stability of incomes and prices, and the administrative machinery of the economy. For example, a progressive personal income tax tends to reduce not only the total output of private goods and services and increase that of public services as the funds are spent by the government, but will also affect resource allocation within the private sector of the economy. Fewer yachts and elaborate houses will tend to be built, and the output of "luxuries" generally will tend to diminish. Such a tax may tend to reduce the level of private savings and capital formation. On the other hand, the government expenditure of the funds obtained may yield a larger output over time than the private savings foregone would have done when utilized in private capital formation.

It is claimed by some experts that the harmful effects of the tax on the motivations to save and to invest have been exaggerated, particularly if society is given time to adjust and is not shocked by sudden and unexpected changes. Whatever empirical studies exist have proved inconclusive. Much saving is automatic and institutionalized in nature. Depreciation allowances and the retained profits of corporations constitute a major proportion of savings and are affected relatively little by a personal progressive income tax. Much has been made of the potential reduction in the supply of labour. It is argued that the tax reduces the incentive to work and that it tends to induce people to substitute leisure. Both theoretical analyses and empirical investigations have yielded few firm conclusions on the question. It appears that people earning high incomes will continue to work regardless of the tax because they like their jobs and because they are concerned about maintaining their relative status in society. People earning lower incomes who are affected by the tax may decide to increase their efforts in order to maintain their absolute, as well as relative, levels of income. The arguments and analyses cut both ways; the tax will tend to reduce the labour provided by some individuals and to increase that of others. It is a complex question in which varying conditions and assumptions can be analysed.

In addition, the government expenditure financed by the tax (e.g., health services) can increase both the quantity and quality of labour. It can perform the function of investment in human capital. A lowering of mortality rates and the incidence of illness among the labour force may result in an increase of the total number of man-days worked during a given period. A rise in the health of the labour force increases the productivity of workers.

The provision of welfare measures and subsidized housing may induce a feeling of security, stability and well-being among the labour force which will tend to increase the supply of labour both quantitatively and qualitatively. Many other examples could be cited.

A progressive income tax will tend to equalize incomes, which in time will have various allocative effects on which we shall not dwell. The expenditure of the funds on public goods and services also tends to be equalizing since these may be enjoyed by everyone in the country. The tax will withdraw funds from the private sector, reducing the pressure upon prices, while the expenditure of the proceeds will have the opposite effect. Thus the potential inflationary effect of the government expenditure tends to be offset by the tax. Finally, the collection of the tax will call for the organization of an administrative agency in the public sector. There will also be changes in the private sector; for example, if the tax is collected periodically at the source, employers of labour will have to make special accounting adjustments. The expenditure of the funds collected will also call for new administrative arrangements in the public sector.

We could work our way through the various kinds of taxes and expenditures in the above manner and in much more detail. This is a major task which we did not undertake. Enough has been said, however, to make one careful about statements regarding the burden of taxes and benefits of expenditures. What we are saying is that the public sector may be either too small or too large to achieve that balance between private and collective goods which promotes optimum resource allocation, a rapid rate of continuing economic growth, a desired income distribution, full employment without inflation, and productive and administrative efficiency throughout the whole economy. There is no statistical magic number which measures this state of affairs; conditions change over time. An economy with a low level of production will tend to have a smaller public sector proportionately than a highly developed economy. As the Gross National Product grows, both the public sector and the level of taxation necessary to support it, can and will tend to rise.

That this has been the case in Canada can be seen from an examination of Table 21-1. Because it is not possible to eliminate the effect or price change from taxes the data are presented in current dollars. Between 1949 and 1961, government revenue as a proportion of GNP rose from 25.1 per cent to 29.7 per cent and the latter in a year when the rate of growth of GNP was not particularly rapid. All major classes of revenue rose including direct taxes, indirect taxes, investment income and other revenue; but direct taxes did not account for a larger proportion of total government revenue over the period.

TABLE 21-1 TOTAL REVENUE, ALL GOVERNMENTS, CANADA, 1949, 1955
AND 1961
(\$ '000,000)

Item	1949	1955	1961
<i>Direct Taxes</i>			
On persons.....	789	1,499	2,511
On corporations.....	718	1,272	1,612
Withholding taxes.....	47	67	116
Total, Direct Taxes.....	1,554	2,838	4,239
<i>Indirect Taxes*</i>	1,885	3,319	4,970
Investment Income**.....	419	753	1,130
Other†.....	239	476	787
Total Revenue, All Governments.....	4,097	7,386	11,126

(Per Cent of Gross National Product)

Direct Taxes.....	9.5	10.4	11.3
Indirect Taxes*.....	11.5	12.2	13.3
Investment Income**.....	2.6	2.8	3.0
Other†.....	1.5	1.8	2.1
Total Revenue, All Governments.....	25.1	27.2	29.7

*Includes customs import duties, excise duties, excise taxes, amusement taxes, gasoline taxes, licences and fees, real property taxes, retail sales taxes, and miscellaneous.

**Includes interest on government-held public funds, loans, advances and investments, and also profits (net of losses) of government business enterprises.

†Includes contributions to public service pensions, unemployment insurance, workmen's compensation, and industrial employees' vacations.

SOURCE: Hanson, E., *The Public Finance Aspects of Health Services*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964. See Appendix A, Table A-3.

Again Canada experienced much the same type of development as other industrialized countries whose tax receipts rose to match their increased expenditures. With respect to the ratio of total taxes collected to GNP, exclusive of investment income and other revenue, this ratio is higher for most western European countries and the United States than for Canada. Only a few developed countries fall below the Canadian ratio. A recent tabulation in the *Canadian Tax Journal* has set out the level of total taxation as a percentage of GNP for forty countries in 1960.¹ In this group West Germany

¹ *Canadian Tax Journal*. Canadian Tax Foundation, Toronto, September-October, 1962, pp. 348 and 349. Data derived from the United Nations Statistical Office, Yearbook of National Accounts Statistics, 1961.

leads with 34 per cent, followed by France with 33.2 per cent, Austria with 32.9 per cent, Norway with 32.1 per cent, Sweden with 31.3 per cent. The United Kingdom ranks tenth with 27.9 per cent and the United States eleventh with 27.5 per cent. Canada ranks fourteenth with 24.8 per cent. Twenty-one countries, nearly all in the under-developed category, had levels below 20 per cent, with Nigeria at the bottom of the list with 8.6 per cent.

As in the past, so in the future, the expansion of public services and the provision of transfer payments will be associated with taxation. To finance these outlays existing taxes and other revenue sources used by all levels of government will have to continue to be used. Improvements in tax regulations and administration will have to be sought but if the Gross National Product increases as we have indicated it can and will, the Canadian economy should be able to provide more funds for private spending as well as more funds for public spending if the community so desires. In this latter category, health services are one area in which the public demands have been substantial.

FINANCING PROJECTED HEALTH EXPENDITURES

When we turn to the financing of projected health expenditures the first question we have to consider is: what is private spending and what is public spending? If a family meets the cost of a particular health service out of wages or income from property, clearly this is private spending. What are we to say though if the payment is made out of family allowances, old age pensions, pensions for the blind or from unemployment insurance. In this case payment is financed by a transfer payment and could, logically, be treated as a publicly financed expenditure although it is not in practice possible to do so.

Families may have their health expenditures met by private insurance programmes, the premiums for which are paid by firms and deductions from payrolls. This can be considered as a private expenditure since premiums cover the full cost of care and are met by individuals.¹ When premiums are collected by a government agency which in turn pays private suppliers and non-profit organizations for services rendered, it is the convention to class these payments as public spending. The substitution of one form of payroll deduction for another form of payroll deduction does not, in itself, convert private spending into public spending and a different convention could well lead to such premiums being classified as private outlays even though the intermediary is a government agency.

¹ To the extent that firms deduct contributions to health insurance programmes as a cost of business, public funds are used to subsidize health care since government foregoes taxes it could have collected.

This point is particularly significant when assessing the projected cost of public health services programmes. With the implementation of the recommendations of the Commission there would be an expansion of the proportion of total spending financed in the public sector. This would be due partly to new spending initiated under the programmes but primarily because private spending now would become public spending. Much of the increased expenditures associated with our recommendations is the consequence of a shift in the method of paying for health services that would be purchased whether or not any expansion of public programmes takes place.

There is thus, a range of methods of financing, some of which are clearly private, others which are clearly public and some which can be classified as either. To some extent the distribution of health expenditures between the private and the public sector is a matter of judgment depending on the conventions adopted.

In these projections, however, we have assumed that where public programmes exist, for the most part they will be financed completely by the public sector.¹ Our projections tend then to maximize the size of the public sector but this has been offset to some extent by attributing some public expenditures to the private sector, a development which was made necessary by the limited nature of the data relating to spending on some health items. On the basis of the data available, and in view of the uncertainties of the future, our projections are approximate. But they provide a reasonable indication of the magnitude of the expenditures to be made in the public sector.

Financing Projected Health Expenditures, Assuming Existing Public Programmes, in Current Dollars, 1966 and 1971

We have described the trends in the financing of health services in the post-war period in Chapter 11 and our projection in *current* dollars for the years 1966 and 1971 is based on the trends indicated there. The proportion of medical care expenditures attributable to the public sector has been projected at 12.5 per cent over the decade 1961-1971. This was the proportion so financed in 1961 and is close to the percentage of the previous two years. The proportion of hospital expenditures attributable to the public sector has been projected at 88 per cent of total spending, the proportion which it reached in 1961 when all provinces participated in the Hospital Insurance Programme. All public health expenditures are attributed to the public sector along with 75 per cent of estimated expenditures on hospital capital—a higher per-

¹ There are two exceptions to this assumption. In the projection of the financing of health services in current dollars, assuming the implementation of our recommendations, we have allocated to the private sector a charge of \$1 per drug prescription and the charges levied to pay for part of the replacement cost of glasses lost or broken.

centage than that estimated for the post-war period but in accord with the trends that have developed in the past few years. The distribution of projected expenditures on the administrative costs of health insurance has been made on the basis of an estimate of their distribution in 1961, but all projected expenditures on dental care and other health services such as prescribed glasses, home nursing and private duty nursing, chiropractic services and orthopaedic appliances along with expenditures on prescribed drugs purchased from retail outlets, are allocated to the private sector.¹ The level of expenditures on health capital, research and the education of health personnel that would be reached, without the implementation of the recommendations of this Commission is difficult to project. In view of current trends these expenditures would certainly rise, but the extent of the increase is uncertain. As a consequence, as we have indicated in Chapter 20, we have assumed that expenditures on health capital will be approximately the same with and without an expanded public programme and have only projected public outlays on health research and health education assuming the implementation of our recommendations.²

On the basis of this projection, as shown in Table 21-2 the proportion of health spending financed in the private sector, assuming the same public programmes that existed in 1961, is projected to decline from 45.0 per cent in 1961 to 41.1 per cent in 1966 and to 38.6 per cent in 1971. Out of a total expenditure of \$2,874 million in 1966, private expenditures will amount to \$1,182 million; while in 1971 the amount is \$1,548 million out of a total of \$4,015 million.

Since we have included some public spending on dental services, prescribed drugs and other health items in the private sector, and given the development of public medical care programmes in Saskatchewan and Alberta since 1961, without any implementation of our recommendations the proportion of private financing will almost certainly continue to decline and by 1971 could fall below 35 per cent and public financing account for more than two-thirds of all spending. This proportion would be reduced further if the medical care programmes also being considered by other provinces are implemented.

Financing Projected Health Expenditures, Assuming the Implementation of Extended Public Programmes

With the implementation of the recommendations of the Commission there would be, as we have already indicated, an expansion of the proportion of total spending financed in the public sector both because of the transfer of private to public spending and new spending initiated under the programmes.

¹ These include some relatively small expenditures by public authorities for some dental services, prescribed drugs, prescribed glasses, and orthopaedic appliances.

² See Chapter 20, p. 801.

TABLE 21-2 ESTIMATED PRIVATE AND PUBLIC SPENDING ON PERSONAL HEALTH SERVICES AND OTHER HEALTH ITEMS, ASSUMING EXISTING HEALTH PROGRAMMES, CANADA 1961, 1966 AND 1971

Item	1961			1966			1971		
	Total Spending	Financed Privately	Financed Publicly	Total Spending	Financed Privately	Financed Publicly	Total Spending	Financed Privately	Financed Publicly
Physicians' Services*	—	—	—	506	443	63	649	568	81
Dental and Other Services**	—	—	—	308	308	—	384	384	—
Hospital Services*	—	—	—	1,500	180	1,320	2,265	272	1,993
Administrative Costs of Health Insurance*	—	—	—	95	70	25	116	86	30
Prescribed Drugs**	—	—	—	154	154	—	203	203	—
Public Health Services	—	—	—	150	—	150	190	—	190
Health Research and Grants-in-Aid of Education†	—	—	—	—	—	—	—	—	—
Health Capital††	—	—	—	161	27	134	208	35	173
All Services and Capital	2,018	909	1,109	2,874	1,182	1,692	4,015	1,548	2,467
Percentage Distribution	100.0	45.0	55.0	100.0	41.1	58.9	100.0	38.6	61.4

*Projected on basis of estimated distribution existing in 1961.

**Predominantly financed in private sector so allocated to this sector.

† Included in 1961. Excluded 1966 and 1971, projection not available.

†† Projected on the basis of 75 per cent public and 25 per cent private spending. Assumed to be the equivalent of capital expenditures with an expanded programme less capital expenditures arising from the children's dental programme.

Source: Based on Tables 11-23, 11-24 and 20-4; and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

The allocation of private and public expenditures has been carried out as follows. The projected expenditures on medical care have all been allocated to the public sector although provincial financing techniques may well leave part of these expenditures in the private sector. In view of our recommendations relating to the Hospital Insurance and Diagnostic Services Act, some expenditures, such as for out-patient care, would become a public rather than a private expenditure. In consequence we have reduced the proportion of total hospital expenditures allocated to the private sector to 10 per cent in 1966 and 8 per cent in 1971. The cost of a children's and public assistance recipients' programme for glasses and dental care has been allocated to the public sector except for a small amount estimated to cover the charges levied against those whose glasses have to be replaced through loss or breakage. Again all public health expenditures including Health Grants are allocated to the public sector along with the estimated cost of home nursing care. Expenditures on prescribed drugs have been allocated to the public sector except for a charge of \$1 per prescription which is allocated to the private sector. A proportion of estimated expenditures on general hospital capital, equivalent to 25 per cent of projected spending, has again been allocated to the private sector. The projected expenditures on hospital construction to care for the mentally ill, construction of educational capital and dental clinics have been allocated to the public sector. The administrative costs of health insurance have been allocated on the basis of our estimate of total private and public spending. Other expenditures such as those for dental services and glasses for people not covered by a public programme, along with private duty nursing services, chiropractic services, etc., have been allocated to the private sector. Finally research expenditures and grants-in-aid of education have been allocated to the public sector, although some of these expenditures will be financed from private sources.

PROJECTED PRIVATE AND PUBLIC HEALTH EXPENDITURES IN CURRENT DOLLARS, 1966 AND 1971

The implementation of the recommendations would have the effect then of both increasing expenditures on health care and transferring a larger share of total spending from the private to the public sector. As shown in Table 21-3, the proportion financed in the public sector in 1966 is projected as 82.1 per cent while by 1971, it is projected at 84.9 per cent. In 1966, the effect of this projection is that out of an estimated total spending of \$3,050 million, \$2,503 million is projected as being spent in the public sector and \$547 million in the private sector. By 1971, total spending is projected at \$4,481 million of which public spending is \$3,804 million and private spending at \$677 million.

PROJECTED PRIVATE AND PUBLIC HEALTH EXPENDITURES IN CONSTANT (1957) DOLLARS, 1961-1991

Our projection of *real* expenditures financed in the private and public sector is shown in Table 21-4. In Chapter 20, we outlined what we considered to be the most likely estimate of per capita health spending in constant (1957) dollars in the period 1961-1991. Our projection of the distribution of these expenditures is based upon the allocation measured in current dollars as developed above. Thus it has been assumed that in 1961, some 55 per cent of real expenditures was financed in the public sector, that this will rise to 82.3

TABLE 21-3 ESTIMATED PRIVATE AND PUBLIC SPENDING ON PERSONAL HEALTH SERVICES AND OTHER HEALTH ITEMS, ASSUMING EXPANDED PUBLIC PROGRAMMES, CANADA, 1966 AND 1971

Item	1966			1971		
	Total Spending	Financed Privately	Financed Publicly	Total Spending	Financed Privately	Financed Publicly
	(\$ '000,000)					
Physicians' Services*	525	—	525	797	—	797
Dental and Other Services**	302	277	25	441	331	110
Hospital Services†	1,490	149	1,341	2,274	182	2,092
Administrative Costs of Health Insurance††	95	20	75	116	25	91
Prescribed Glasses ^a	29	2	27	18	2	16
Prescribed Drugs ^b	234	71	163	361	102	259
Public Health Services ^c	150	—	150	190	—	190
Research ^d	32	—	32	48	—	48
Grants-in-Aid of Education ^d	25	—	25	26	—	26
Health Capital ^e	168	28	140	210	35	175
All Services and Capital	3,050	547	2,503	4,481	677	3,804
Percentage Distribution	100.0	17.9	82.1	100.0	14.9	84.9

*Assuming complete public financing.

**Publicly financed expenditures include children's and public assistance recipients' dental programmes and estimated outlays for home care.

†Projected on the assumption that private expenditures decline to 10 per cent in 1966 and 8 per cent in 1971.

††Private expenditures include costs of administering private hospital, dental, drugs, insurance and other categories of spending not covered by public programmes.

^aEstimated cost of contribution of private sector for glasses replaced on account of breakage or loss.

^bPrivate expenditures estimated on basis of \$1 per prescription.

^cIncludes Health Professions Education Grant of 50 cents per capita.

^dAssumed to be public spending.

^ePrivate expenditures include contributions to construction of active treatment hospitals projected at 25 per cent of total spending. Cost of mental, educational and other facilities assumed to be publicly financed.

SOURCE: Based on Tables 20-4 and 20-23.

per cent in 1966 and to 85 per cent in 1971 and that this latter percentage will hold until 1991. On the basis of these assumptions we project *per capita* public health expenditures in real terms as rising from \$54.67 in 1961 to \$99.14 in 1966, \$131.54 in 1971 and to \$204.05 by 1991. Private expenditures are projected to amount to \$21.76 in 1966, \$22.51 in 1971 and to rise to \$36.00 per capita in 1991.

*Projected Public Expenditures on Health as a Percentage of
Projected Total Government Expenditures*

What proportion of total government real spending will be accounted for in the future by government expenditures on health?¹ The answer to this question depends on two projections—of total government expenditures and publicly financed health expenditures—both of which can be no more than indicative of the path which will actually be followed. As we emphasized in Chapter 19, it would not be in accord with the trends in our economy to assume that the proportion of GNE spent by the federal, provincial and municipal Governments, either in the form of direct spending or transfer payments, will decline in the foreseeable future. What is less certain is that the trends in total government spending will not level off at some future date below the amount projected here. As we indicated in Chapter 20, we have endeavoured to present a realistic projection of real expenditures on health services in Canada to 1991. Subsequent events may show that both the absolute level of total government spending and health spending may fall below the amounts projected here and thus produce a situation where government health expenditures as a percentage of total government spending may be different from that which we have projected. Here we can only say that the divergent trends are unlikely to increase significantly the proportion that health expenditures will contribute to total government spending and the percentage we have estimated may turn out to be not much lower than the actual figure.

¹ In discussing government health expenditures as a proportion of government's spending, no distinction has been made between direct spending by governments and transfer payments either in the sphere of total government spending or health spending. The cost of providing health services has been calculated on the assumption that health services are predominantly provided in the private sector of the economy or, where provided in public sector, are paid for at prices comparable with those paid in the private sector. This implies, that if all hospitals were to be transformed into non-profit corporations, and if medical and dental services now supplied by salaried physicians and dentists employed by governments were paid for by the recipients who were in turn reimbursed by governments, all government health expenditures would be classed as transfer payments. Since governments will continue to employ physicians and dentists in the future and to operate hospitals, and since most of the industry will remain in the private sector of the economy, public spending will consist of both direct spending and transfer payments which we have not attempted to estimate separately.

TABLE 21-4 ESTIMATED PRIVATE AND PUBLIC PER CAPITA SPENDING ON PERSONAL HEALTH SERVICES AND OTHER HEALTH ITEMS
ASSUMING EXPANDED PUBLIC PROGRAMMES, CONSTANT (1957)
DOLLARS, CANADA, SELECTED YEARS, 1961-1991*

Year	Per Capita Expenditures**	Financed Privately†	Financed Publicly†	Per Cent Projected Total Government Spending††	
				Projected Per Capita Government Expenditures ^a	Per Cent Spent on Health
	\$	\$	\$	\$	
1961	99.40	44.73	54.67	604	9.1
1966	120.90	21.76	99.14	764	13.0
1971	150.05	22.51	131.54	997	14.7
1976	178.88	26.83	152.05	1,059	14.4
1981	202.00	30.30	171.90	1,207	14.2
1986	223.00	33.45	189.55	1,373	13.8
1991	240.05	36.00	204.05	1,586	12.9

*Includes expenditures as outlined in Footnote *, Table 20-1.

**Per capita spending on health care, "most likely" projection, Table 20-1.

†Projected on basis of distribution of spending in current dollars as calculated in Table 21-3; 18 per cent private spending in 1966, 15 per cent private spending in 1971 to 1991.

††Per capita public spending on health services and health capital as a percentage of projected per capita total government expenditures including defence expenditures.

^aSee Table 19-9.

SOURCE: Based on Tables 19-9, 20-1, and 21-3.

As shown in Table 21-4 the proportion of per capita real government expenditures attributable to health spending—including both direct spending and transfer payments—amounted to 9.1 per cent in 1961. Our projection indicates, assuming that total government spending grows at a rate consistent with the projected higher growth of GNP, that this proportion will rise to 13 per cent by 1966 and to 14.7 per cent by 1971. This would be the maximum percentage reached. Thereafter, the proportion spent in health declines until by 1991 it is projected to amount to 12.9 per cent. In short, government outlays for health are unlikely to account for more than 15 per cent of total government spending at any time between 1961 and 1991, an increase of six percentage points over the year 1961 and less than four percentage points comparing 1991 with 1961.

ALLOCATION OF PUBLIC HEALTH EXPENDITURES BY LEVEL OF GOVERNMENT

Throughout this Report we have emphasized that if all Canadians are to have available adequate health services, the planning of health services and the health care coverage available must take account of adequate standards of health services for Canadians from one end of the country to the other, as well as the necessity to provide an appropriate level of health personnel and facilities to implement the health care programme. We have also stated that the efficient utilization of scarce resources will require integrated and co-operative planning in which the federal government, provincial governments, municipal governments, voluntary organizations, professional personnel and laymen must participate.

We have emphasized also that the implementation of the health care programme recommended in this Report will not lead to any substantial change in the degree of *direct* participation in the provision of health services either by the federal, provincial or municipal governments. Where it will be necessary for governments directly to provide health services, as in the case of public health services and certain classes of hospital care, these functions largely will continue to be handled efficiently by provincial authorities, regional authorities or by large municipal authorities. Some health services necessarily must be performed by the federal government in the national interest; these include food and drug regulation, health examination of immigrants, health research and the health care of veterans. The main responsibility for the provision of health services, however, will lie with the private sector or with the provincial and local authorities.

The implementation of our recommendations primarily will lead to an expansion of the role of government in the planning and organization of a health care programme, including health services, personnel, facilities, and research, as well as financing, and it is to the division of these functions, along with the expenditures and sources of revenue, between the various levels of government that we now turn.

The provision of an adequate standard of health services for all Canadians as we have already indicated will require the participation of the federal government in the planning of health care programmes and the establishment of national standards.¹ There remains the question of the division of revenues and expenditures.

In general we have taken the Hospital Insurance and Diagnostic Services Act, along with other Health Grant Acts, as a pattern for the financing of the health programmes we have recommended. In so doing we have recommended that for the predominant part of future government expenditures, the

¹ See Chapter 1 and Chapter 2, Recommendations 190 to 195.

federal government should share the cost equally with provincial governments. We wish, however, to emphasize that the provision of a minimum standard of health services may be difficult in some provinces because of their inability to finance even 50 per cent of the cost of public health care programmes. We have therefore examined the problem of fiscal need and made certain suggestions about the financing of health care arising out of this examination.

Our recommendations do not imply that we are opposed to other methods of financing such programmes. For example, it is possible that revenues might be reallocated between the federal and provincial governments along with the responsibility for various public functions. Thus as provinces expand their public hospital, medical and other health care programmes, after these have been in operation for some period of time, the federal government could shift from a conditional grant approach to a reallocation of revenue approach, withdrawing from certain tax fields, or giving a proportion of certain tax fields to the province to provide the finances for health programmes. Of course such a development would have to take account of regional fiscal capacity.

Provided that the needs of Canadians for health care are met; provided that the quality and scope of health services provided is equivalent to what we have recommended; provided such services are operated in the most economic manner and properly planned and integrated; the techniques adopted for their financing are of secondary importance.

GRANTS-IN-AID

Our examination of the various techniques currently used to transfer funds from the federal government to the provincial governments makes it desirable to concentrate on the existing techniques developed for sharing the cost of health programmes—that is the conditional grant of which the grants made under the Hospital Insurance and Diagnostic Services Act are a most important example. Such grants-in-aid appear to solve, at present, the problems of intergovernmental finance in the field of health services more effectively and adequately than any other alternative. They enable us to take account of the two main goals, the establishment of adequate standards of services and the equalization of capacity to pay.

Professor Donald Smiley has recently published an appraisal of federal conditional grants in Canada.¹ It is a helpful and timely document

¹ Smiley, Donald V., *Conditional Grants and Canadian Federalism*, a Study in Constitutional Adaptation, Canadian Tax Foundation, Toronto, February 1963. For a further comment on the usefulness of grants-in-aid as a device for achieving national average standards of service and equity in financing, see United Nations, Department of Economic and Social Affairs, *Report on the Organization and Administration of Social Services*, Report by the Group of Experts appointed by the Secretary-General of the United Nations, New York: The Organization, 1962, pp. 28 and 29.

and provides specific analyses of the various grants, including those for health services. Here we shall indicate briefly some points he makes in connection with health and hospital grants. The federal government made many federal-provincial financial proposals of the 1945-1946 Reconstruction Conference with a comprehensive set of conditional grants for health services as part of the whole scheme of things. The Conference broke down in May 1946 and the federal government proceeded to negotiate with the provinces on separate issues and in piecemeal fashion. In the sphere of health the federal government established shared-cost programmes beginning in 1948. We traced the development of these in Chapter 4.

Professor Smiley's analysis covers the basis of federal sharing; financial administration, co-operation and conflict, and the impact on provincial finance.¹ He makes certain suggestions which deserve attention. There is a need for more progress "in rationalizing the auditing and reimbursement procedures and in eliminating some of the more anomalous definitions of shareable costs where the amounts involved are small . . .".² He also recommends that all the present health grants, excluding those for hospital construction, be amalgamated into one public health grant.³ More could also be done by the federal government to inform provincial governments well ahead of time of intentions of changes in grants; conditional grants create uncertainties in provincial budgeting and planning since a matching of funds is involved. In general, he concludes: "With all their defects, conditional grants have brought an invaluable element of adaptability to a federal structure which has proved remarkably resistant to change through constitutional amendment or evolving patterns of judicial review".

As a consequence of the implementation of our recommendations many of Professor Smiley's criticisms of the health grant approach would be removed. We have generally argued for a more rational organization of health grants and for a reduction in the amount of unnecessary accounting procedures. We have also recommended the amalgamation of a number of specific grants into more general grants, particularly the elimination of certain specific disease-oriented and client-oriented grants.⁴

Bearing in mind our emphasis on flexibility in working out financial arrangements with provincial governments in the health field, we feel that the conditional grants can be used to create a structure of health services along with personnel, facilities and research that is in keeping with Canada's federal structure while providing a high level of health care for all Canadians regardless of where they reside.

¹ Smiley, Donald V., *op. cit.*, Chapter III.

² *Ibid.*, p. 70.

³ *Ibid.*

⁴ See Chapter 2, Recommendations 196 and 197.

FISCAL NEED

There remains, however, one problem that is of concern; the fact that resources, and economic conditions and progress are not uniform throughout Canada. For example, there are provinces in Canada whose ability to finance a given level of health services is much less than others. Differences in the fiscal capacities of provinces are such that in order to achieve national average standards of health or other services, they need to impose a tax burden above the national average.

At present there are constitutional provisions regarding the division of revenue sources between the federal and provincial governments as well as federal-provincial taxation arrangements arrived at by negotiation. Finally there are the grants-in-aid. The consequences of all these arrangements is that the federal government collects taxes largely in excess of its expenditures and transfers large sums of money to the provinces to enable them to finance their obligations. Similarly the provinces transfer funds to the municipalities to finance expenditures in excess of their revenue.

How far the present system meets the needs of the federal government and the provinces is beyond the terms of reference of this Commission. But we are required to offer some suggestions with respect to the financing of health care programmes proposed and we do so in the sections that follow with our recommendations presented in Chapter 2.¹

PROJECTED FEDERAL AND PROVINCIAL SPENDING ON HEALTH SERVICES AND OTHER HEALTH ITEMS

In Tables 21-3 and 21-4 we have set forth estimated private and public spending on health services and other health items both in current dollars for the years 1966 and 1971 and in constant (1957) dollars for selected years within the period 1961 to 1991. In Tables 21-5 and 21-6 we have estimated how public expenditures would be distributed between the federal and provincial governments assuming that the recommendations outlined here were adopted.²

For most programmes our recommendations are that the federal government meet 50 per cent of the cost of publicly financed programmes. In a few instances this is not the case. For example our estimates include spending on education of health personnel and health research. In both these areas provincial governments will spend funds but due to lack of data these have not been included in the projection. In consequence, projected

¹ See Chapter 2, Recommendations 190 to 195.

² It is recognized that certain health expenditures will be financed by municipal governments, but for purposes of this analysis, spending is only classified as federal or provincial. See footnote (a) in Table 21-5.

expenditures on health education and health research are all assumed to be financed by the federal government, recognizing that this underestimates provincial expenditures. In the case of hospital construction, it has been assumed that for the construction of psychiatric beds and institutions for the mentally retarded, where these replace obsolescent institutions, that there will be no private sharing and that the federal government will bear 50 per cent of the cost. For all other beds and bassinets, the federal share has been projected at 15 per cent of the cost remaining after deducting 25 per cent that represents private donations or funds belonging to the hospitals.¹

In terms of current dollars, assuming the implementation of the recommendations made here, Table 21-5 indicates that the federal share of total public spending in 1966 is projected at \$1,246 million or 49.8 per cent while spending by other levels of government is projected at \$1,257 million or 50.2 per cent. By 1971, federal spending is projected to rise to \$1,894 million or 49.8 per cent and spending by other levels of government to rise to \$1,910 million or 50.2 per cent.

TABLE 21-5 ESTIMATED PUBLIC SPENDING ON HEALTH SERVICES AND HEALTH CAPITAL BY LEVEL OF GOVERNMENT, ASSUMING EXPANDED PUBLIC PROGRAMME, CANADA, 1966 AND 1971*

Year	Projected Total Public Expenditures	Projected Federal Share of Total Spending		Projected Provincial Share of Total Spending	
	(\$'000,000)	(\$'000,000)	Per Cent	(\$'000,000)	Per Cent
1966	2,503	1,246	49.8	1,257	50.2
1971	3,804	1,894	49.8	1,910	50.2

*Provincial government spending includes expenditures made by municipal governments.

SOURCE: Based on Table 21-3 and Madden, J. J., *Economics of Health*, a study prepared for the Royal Commission on Health Services, Ottawa: Queen's Printer, 1964.

When spending is measured in constant (1957) dollars as indicated in Table 21-6, real expenditures by the federal government are projected to rise from \$369 million in 1961 to \$1,002 million in 1966 and \$1,435 million by 1971. By 1991, federal spending is projected at \$3,567 million. These are sizeable sums of money but in terms of percentage of Gross

¹ In the case of projected expenditures on facilities associated with the development of the Children's Dental Services, the federal share has been estimated at 75 per cent of projected outlays in 1966 and 50 per cent in 1971 and thereafter.

National Expenditure it can be seen that at no time does federal spending exceed more than 2.8 per cent of Gross National Expenditure and that it expands at a rate well within the capacity of the Canadian economy. The most rapid increase in federal spending comes in the period 1961 to 1966 as public spending is substituted for private spending but once the transitional stage is completed, federal outlays grow no more rapidly than Gross National Expenditure amounting to 2.8 per cent of GNE in 1976 and 2.7 per cent in 1991.¹

Table 21-6 also indicates projected spending in constant (1957) dollars by governments other than the federal government, namely provincial governments (including municipal outlays). In 1961, expenditures amounted

TABLE 21-6 ESTIMATED PUBLIC SPENDING ON HEALTH SERVICES AND HEALTH CAPITAL, BY LEVEL OF GOVERNMENT, ASSUMING EXPANDED PUBLIC PROGRAMMES, CONSTANT (1957) DOLLARS, CANADA, SELECTED YEARS, 1961-1991*

Year	Projected Total Public Expenditures		Projected Federal Share of Total Spending		Projected Provincial Share of Total Spending	
	Total Spending	Per Cent of GNE	Total Spending	Per Cent of GNE	Total Spending	Per Cent of GNE
	(\$'000,000)		(\$'000,000)		(\$'000,000)	
1961	998	2.9	369	1.1	629	1.8
1966	2,013	4.5	1,002	2.2	1,011	2.3
1971	2,881	5.1	1,435	2.5	1,446	2.6
1976	3,837	5.5	1,911	2.7	1,926	2.8
1981	4,850	5.6	2,415	2.8	2,435	2.8
1986	5,980	5.6	2,978	2.8	3,002	2.8
1991	7,163	5.4	3,567	2.7	3,596	2.7

*Based on a projected high level of growth of GNP, the "most likely" projection of per capita spending on health services and capital, the distribution of private and public spending as projected in Table 21-3, and the distribution of federal and provincial spending as projected in Table 21-5. Provincial government spending includes expenditures made by municipal governments.

SOURCE: Based on Tables 11-14, 11-26, 19-1, 21-3 and 21-5.

to \$629 million and these are projected to rise to \$1,011 million in 1966 and to \$1,446 million in 1971. By 1991, expenditures are projected at \$3,596 million. Again these are sizeable sums, but in terms of Gross National

¹ With a slower growth of GNE, federal spending on health would account for a somewhat larger share of GNE if health spending remained unchanged. Since it is likely that health spending would be less if GNE grew more slowly the percentage of GNE allocated to health is not likely to be significantly higher.

Expenditure, once the transitional stage is past and public funds substituted for private funds, provincial expenditures as a percentage of GNE do not exceed 2.8 per cent in 1976 and by 1991 are at 2.7 per cent.

Moreover, the transitional stage involves much less of an expansion of provincial spending than it does in the case of federal government spending. Between 1961 and 1966, provincial spending as a proportion of GNE rises by only .5 percentage points, and between 1961 and 1971 rises by only .8 percentage points. This is, of course, the consequence of federal sharing in the costs of mental and tuberculosis hospital care, the construction of psychiatric hospital beds, and medical, dental and other health care provided to welfare recipients, most of which in 1961 was borne by the provincial or municipal government.¹

WILLINGNESS TO FINANCE PUBLIC PROGRAMMES

We have concluded that the implementation of our programme will necessitate an expansion of public expenditures and thus an increase in the premiums and taxes collected by the federal and provincial governments. How do Canadians in general feel about the possible higher cost of improved health care and the prospect of higher taxes or other forms of contribution for this purpose?

To answer this question we have throughout our hearings inquired from spokesmen of representative population groups with varying interests, whether those they represented would accept higher taxation to pay for the cost of increased and improved health services. The answer has been yes, and there has been no dissenting voice. The position has been stated in its most succinct form as follows:

"If we as individuals or as organizations accept or ask for greater services from senior government, from others than ourselves, we must be prepared to pay."²

¹ Although we recognize that provinces may finance their programmes by any means they choose, we have calculated the percentage of GNE that the provinces would have to raise in order to finance provincial and municipal health spending if the provinces collected in the form of premiums the same proportion of real GNE as was collected in 1961, by private medical care insurance and provincial hospital care insurance plans. Private insurance plans collected about 0.55 per cent of real GNE while those provinces that had premiums collected about 0.30 per cent of GNE. The total collected was about .85 per cent of GNE. Reducing provincial expenditures by this amount, projected provincial share of health spending as a percentage of GNE would be reduced to 1.7 per cent in 1961. With the transfer of financing to the federal government, in 1966, provincial expenditures would account for only 1.35 per cent and would be less than 2 per cent throughout the period.

² Transcript, *op. cit.*, January 25, 1962, Regina, Vol. 20, p. 4743. (Mr. Boileau for the Saskatchewan Wheat Pool).

Labour, agricultural, business and consumer spokesmen all made similar statements.¹

THE FUTURE

It is obvious, even if no new programmes are adopted, that gross expenditures on health services will increase very substantially by 1971 (see Table 20-23). The population will be 22.6 million by then, an increase of 24 per cent over 1961. Over the same period hospitalization costs alone will have increased by over 1.3 billion, or by 145 per cent, and Canada is committed to the hospital programme. *No one* has suggested curtailing or abandoning it. The sum total of all our proposals is to add to the hospital programme and to the existing services the personal health services needed to round out the concept of comprehensive and universal coverage. These additional services will, if implemented, cost an extra \$466 million in 1971. That is the price tag which must be affixed to our proposals. We are fully aware that it is a substantial sum. But we are equally aware that the benefits which will flow from such a comprehensive universal health service will be more than worth the price in terms of good health and human happiness.

-
- ¹ a) Transcript, *op. cit.*, November 1, 1961, Halifax, Vol. 5, p. 1313. Mr. Bell for the Nova Scotia Federation of Labour: "We think in conjunction with such a program the Government should look at its source of revenue itself to the point of not only calling upon people to meet the cost through personal income tax but also through upward revision of corporation tax and probably increases in succession duties and other means which are at their disposal."
 Transcript, *op. cit.*, February 22, 1962, Vancouver, Vol. 30, p. 6508. The B.C. Federation of Labour.
 Transcript, *op. cit.*, April 9, 1962, Quebec, Vol. 40, p. 7890. The Federation of National Trade Unions.
 Transcript, *op. cit.*, May 25, 1962, Toronto, Vol. 60, p. 11284. Canadian Labour Congress.
 Transcript, *op. cit.*, June 2, 1962, Toronto, Vol. 66, p. 12493. Ontario Federation of Labour.
- b) Transcript, *op. cit.*, March 19, 1962, Ottawa, Vol. 33, p. 6844. Mr. McNally for the Canadian Chamber of Commerce: "Our position is that in our view no Canadian should be allowed to suffer medical illness or accidents because he can't pay for it, and to the extent that the provinces or municipalities must increase their budget to take care of these people in these circumstances, we are prepared to pay for it."
 Transcript, *op. cit.*, May 23, 1962, Toronto, Vol. 58, p. 11006. Mr. Drysdale for the Ontario Chamber of Commerce: "Yes, we would. After all, if we accept it I think we have to be prepared to pay for it, and just how that might be done is another question. In other words, depending upon who you extract the money to do this."
 Transcript, *op. cit.*, February 16, 1962, Edmonton, Vol. 26, p. 5775, statement for the Edmonton Chamber of Commerce.
- c) Transcript, *op. cit.*, May 14, 1962, Toronto, Vol. 52, p. 10002. Dr. Hastings for the Toronto School of Hygiene: "There would have to be substantial federal contribution, which would presumably come out of taxation, but the provincial portion, we feel, should be left to the individual provinces."
- d) Transcript, *op. cit.*, March 23, 1962, Ottawa, Vol. 37, p. 7555. Mrs. Annie G. Haggerty speaking on behalf of the Federated Women's Institutes of Canada: "I think they would (pay his/her taxes) if the health services were better."
 Transcript, *op. cit.*, January 23, 1962, Regina, Vol. 18, p. 4317, testimony by Mr. Gleave on behalf of the Saskatchewan Farmers' Union.

ALL OF WHICH WE RESPECTFULLY SUBMIT
FOR YOUR EXCELLENCY'S CONSIDERATION

Sumner W. Hall

Chairman

Commissioners

Ellice Guard

D.M. Bogan.

V.J. Prestice

C.L. Strachan

Arthur F. Van Wait

B.H. Blishen.

Director of Research

[Signature]

Secretary

February 26, 1964.

APPENDIX A

ACKNOWLEDGEMENTS

Our Terms of Reference required the study of a broad range of problems. In this we were ably assisted by many individuals, voluntary organizations, business, labour and professional groups, and governments at all levels.

We received briefs from 406 organizations and individuals. These provided us with a great deal of information touching on many aspects of health and health services which facilitated our study. During our hearings, we heard the views of a large number of individuals. We are indebted to them for their enlightened discussion of a wide range of problems and programmes in the health field. We were greatly helped by provincial governments which made available to us their experiences in administering health services, difficulties encountered, and possible remedies. Many who appeared before us were requested to supply supplementary information which they did, and this in some instances required extensive additional work on their part. To these individuals and groups we would like to express our appreciation. To all who submitted briefs, and to those who appeared before us we are most grateful.

We should like to express our appreciation to the provincial and municipal officials in Halifax, St. John's, Charlottetown, Fredericton, Quebec City, Montreal, Ottawa, Toronto, Winnipeg, Regina, Edmonton, Vancouver and Victoria for their hospitality and help in the arrangements for our hearings. We were privileged to enjoy the hospitality of many people in these cities.

Many Federal Government Departments have helped us in providing information, in preparing material, or in processing data collected by the Commission's research staff. We are particularly indebted to officials of the Department of National Health and Welfare for the willingness and alacrity with which they assisted us in many of our studies especially those dealing with medical manpower, the drug industry under the direction of Mr. R. J. Lachapelle, and for the services of Mr. George Plet for a short period. We are grateful for the assistance of Mr. R. M. Davidson of the Department of Justice and to Dr. C. A. Morrell and Dr. L. I. Pugsley of the Food and Drug Directorate of the Department of National Health and Welfare for assistance and advice relating to drugs. We would like to acknowledge

our debt to the Dominion Bureau of Statistics for the services of Dr. R. Kohn and for supplying a wide range of data for this Report and many of our studies, and for the preparation of charts and graphs.

To the Department of Labour, we would like to express our thanks for the services of Mr. A. Boyd and for co-operation in the planning and execution of a survey of medical insurance and prepayment plans in Canadian working establishments. We are grateful to the Department of Citizenship and Immigration, the Department of Agriculture and the Department of Mines and Technical Surveys for assistance in the processing of data collected by the Commission's research staff. To the Canadian Pension Commission, the Department of Finance, the Department of Insurance, the Department of National Defence, the Unemployment Insurance Commission, the Department of National Revenue, the Department of Northern Affairs and National Resources and the Royal Canadian Mounted Police, we are indebted for their co-operation and assistance.

The health departments of the provincial governments, the Yukon and the Northwest Territories assisted us in many ways. To those provincial officials who so generously helped us we would like to express our appreciation. In supplying us with data for this Report, and in co-operating with our research staff in the preparation of numerous studies they gave ample evidence of their willingness to co-operate in an undertaking to promote the national well-being.

Our task was facilitated by the assistance we received from the Canadian Medical Association and its provincial branches, L'Association Médicale de la Province de Québec, L'Association des Médecins de Langue Française du Canada and its Filiale du Québec, L'Association des Médecins-Chirurgiens en Pratique Générale du District Médical de Montréal, the Royal College of Physicians and Surgeons, the provincial Colleges or Councils of Physicians and Surgeons, the Medical Council of Canada, the Collège des Médecins et Chirurgiens de la Province de Québec, the Canadian Dental Association, La Société Dentaire de Montréal, the Canadian Nurses' Association and the many other associations of health personnel. To each of these we would like to express our appreciation for their assistance in our endeavours.

Numerous individuals and agencies across Canada were unstinting in their efforts to help us. We are particularly grateful for the help we received from Dr. P. H. T. Thorlakson of Winnipeg; Dr. J. C. McMaster, Mr. Hubert A. Prefontaine and the Board of Manitoba Medical Services; Mr. Corbet Drewry, Canadian Health Insurance Association; Mr. Howard Shillington, Trans-Canada Medical Plans; Mr. Ralph N. MacIntosh, Zurich Insurance Company; Mr. W. S. Major and Mr. Arthur Bond, Physicians' Services Incorporated; and Mr. W. J. Mathers, Mr. Glen Sundquist and Mr. J. K. Sawa, Medical Services Incorporated.

In the course of our deliberations some Commissioners visited the United Kingdom, France, Holland, Sweden, Switzerland, Austria, Italy, the United States, Australia, New Zealand and the U.S.S.R. These visits enabled us to observe the health care programmes in these countries with regard to their organization, administration and financing and their effect on the health professions. To the many individuals who gave us of their time we are grateful. We are particularly indebted in this regard to Sir Arthur Grieve, Sydney, Australia; Senator Wade and Major General W. D. Refshauge, Canberra, Australia; the Honourable Mr. McKay, Minister of Health, Wellington, New Zealand; officials of the British Medical Association; Sir Arthur Porritt and officials of the Royal College of Surgeons; Sir George Godber, Chief Medical Officer, Ministry of Health; Surgeon Rear-Admiral Holgate, Director, Dental Health Services, Ministry of Health; Mr. J. V. Bingay, Dental Auxiliary School, New Cross Hospital; Miss E. M. Knowles, Deputy Senior Dental Officer, officials of the Royal Dental College; Dr. W. S. Maclay; Dr. Brian Abel-Smith, London School of Economics; Lord Stephen Taylor; Dr. Donald Johnson, M.P.; the officials of Massey-Ferguson Company at Coventry, England and Paris, France; Dr. F. Grundy, Assistant Director General, World Health Organization, Geneva; Dr. P. A. H. Baan, Groningen, Holland; the late Senator Estes Kefauver, and members of the Subcommittee on Antitrust and Monopoly of the Committee of the Judiciary of the United States Senate; officials of the Health Insurance Plan of Greater New York; Dr. P. B. Magnusson, Washington, D.C.; the American Medical Association; Dr. Odin Anderson and Dr. Harry Johnson, University of Chicago; Dr. Wm. J. McNERney, Study Director of the Governors' Study Commission, Prepaid Medical Care Plans, State of Michigan; Dr. C. R. Esselstyne, Rip Van Winkle Clinic, New York State; representatives of the Kaiser Foundation Health Plan of California; the Wenatchee Valley Clinic, Wenatchee, Washington; and the Group Health Co-operative of Puget Sound, Seattle, Washington.

In Appendix B will be found a list of studies, which were prepared for the Commission by outstanding scholars from universities and other organizations. We are indebted to Dr. J. A. MacFarlane, Dean Emeritus, Faculty of Medicine, University of Toronto and Dr. G. H. Ettinger, Dean Emeritus, Queen's University, who co-operated with other colleagues from other universities in studying the problems of medical education. We would like to express our thanks to Laval University for making available the services of Dr. Pierre Jobin; to Dalhousie University for the services of Dr. R. C. Dickson; to the University of Montreal for the services of Dr. R. Dufresne; the University of British Columbia for the services of Professor B. R. Blishen, our Research Director, Dr. J. F. McCreary, Dr. R. A. Robson, Dr. A. Richman, and Professor F. A. Morrison; to the University of Alberta, Edmonton, for the services of Dr. E. J. Hanson; to the University of Alberta,

Calgary, for the services of Dr. M. G. Taylor, Dr. D. Mills, and Dr. E. B. Inlow; to the University of Saskatchewan, Saskatoon, for the services of Dr. D. G. McKerracher; to the University of Saskatchewan, Regina, for the services of Dr. J. A. Boan; to the University of Western Ontario for the services of Dr. J. J. Madden; to the University of Toronto for the services of Dr. O. Hall, Dr. K. J. Paynter, Dr. Muriel Uprichard, Dr. Elizabeth Govan, and Dr. J. E. F. Hastings; to Queen's University for the services of Dr. T. M. Brown; to Carleton University for the services of Dr. B. McFarlane; to the University of Ottawa, for the services of Dr. S. Judek; to Yale University and The Brookings Institution for the services of Dr. C. H. Berry; to the Canadian Nurses' Association for the services of Dr. Helen Mussallem; to the Canadian Tuberculosis Association, for the services of Dr. G. J. Wherrett; to the Canadian Pharmaceutical Association, for the services of Mr. T. Ross; and to the Association of Canadian Medical Colleges for the services of Dr. J. W. Macleod.

To the Queen's Printer and to the Bureau of Translations, we are grateful for their speed and efficiency.

To the staff of the Royal Commission, who bore the brunt of the heavy research and administrative responsibilities we are especially grateful. Their patience and persistence for the past three years have brought this Report to completion. We wish to mention particularly Dr. Pierre Jobin, our Medical Consultant for his help in our deliberations and in the translation of this Volume, Dr. M. G. Taylor, our Research Consultant for his expert advice at every stage of our research, Dr. R. Kohn, our Assistant Director of Research who has given us at all times invaluable assistance in all phases of our endeavours. We would like to commend Mr. Norman Lafrance, our Secretary for his cheerfulness and competence in the face of the many demands made upon him and Mr. Justice R. N. Hall for his legal assistance during the course of our hearings. Dr. J. J. Madden, Dr. C. H. Berry and Dr. J. A. Boan were unstinting in their efforts, and through their expert assistance in our research operations they played a major role in the study of the economic implications of many of the problems upon which the Commissioners required specialized assistance. Throughout the work of this Commission, and particularly since Mr. Lafrance's gradual withdrawal due to his new duties with the Economic Council of Canada, Mrs. Helen Roney's familiarity with the administrative details relating to translation, printing and publication of Royal Commission reports, has helped us greatly. To her and the clerical staff for their assistance and patience in the face of very heavy demands we wish to express our thanks.

Finally, we wish to record our appreciation of the services rendered by Professor Bernard R. Blishen, who came from Vancouver with his wife and family to undertake the duties of Research Director. Upon him devolved

the planning of the research programme, the co-ordination and completion of the studies and assistance in the drafting of the Report. In all of his work he displayed a broad understanding of the social and economic forces involved in the search for solutions to Canada's requirements in the health service field. He brought to us the fruits of careful study of the unique features of Canadian society. We extend to him our best wishes in the new career that he now begins at Trent University, Peterborough.

APPENDIX B

STUDIES PREPARED FOR THE COMMISSION

<i>Study Title</i>	<i>Study Directors and Associates</i>
Medical Education in Canada	Dr. J. A. MacFarlane Dr. R. C. Dickson Dr. R. Dufresne Dr. G. H. Ettinger Dr. J. W. Macleod Dr. J. F. McCreary
Medical Manpower in Canada	Dr. S. Judek
Group Practice	Dr. J. A. Boan
Dental Manpower in Canada	Dr. B. McFarlane
Dental Education in Canada	Dr. K. J. Paynter
Utilization of Dentists in Canada	Dr. O. Hall
Nursing Education in Canada	Dr. Helen K. Mussallem
Utilization of Nurses in Canada	Dr. Muriel Uprichard
Sociological Factors Affecting Recruitment into the Nursing Profession	Dr. R. A. Robson
Pharmacists Manpower in Canada	Mr. T. M. Ross
Recruitment, Education and Utilization of Pharmacists in Canada	Prof. F. A. Morrison
Paramedical Manpower in Canada	Mr. A. D. Boyd
Study of Chiropractors, Osteopaths and Naturopaths in Canada	Dr. D. Mills
Psychiatric Care in Canada: Extent and Results	Dr. A. Richman
Trends in Psychiatric Care	Dr. D. G. McKerracher
Tuberculosis in Canada	Dr. G. J. Wherrett
Health Status of the Canadian People	Dr. R. Kohn
Voluntary Health Organizations in Canada	Dr. Elizabeth S. L. Govan

Organized Community Health Services	Dr. J. E. F. Hastings
Emerging Patterns in Health Care	Dr. R. Kohn
Economics of Health	Dr. J. J. Madden
Public Finance Aspects of Health Services	Dr. E. J. Hanson
Canadian Economic Growth	Dr. T. M. Brown
National Health Grants Programme	Dr. E. B. Inlow
Voluntary Medical Insurance and Prepayment	Dr. C. H. Berry
Report on the Provision, Distribution, and Cost of Drugs in Canada	Department of National Health and Welfare, Research and Statistics Division

APPENDIX C

STAFF OF THE COMMISSION

RESEARCH STAFF

B. R. Blishen
Director of Research

R. Kohn
Assistant Director of Research

C. H. Berry	J. Boan	J. J. Madden
Economic Consultants		

H. Alexis	F. Paltiel
G. Cook	G. Plet
M. Eliesen	P. Satterthwaite
G. Erdody	P. Tomlinson
S. Gourlay	P. Walters

CONSULTANTS TO THE COMMISSION

M. G. Taylor, Ph. D.	R. N. Hall, Q.C.,	Pierre Jobin, M.D.
Research Consultant	Legal Counsel	Medical Consultant

ADMINISTRATIVE STAFF

N. Lafrance	H. M. Roney	
Secretary	Assistant Secretary	
C. Alary	R. Dupuis	A. Martin
J. Armstrong	E. Jones	A. Oades
F. Beriault	J. Labelle	S. Richard
T. Cameron	C. Lam	G. Robertson
V. Conroy	P. Laurin	P. Sims
L. Culpan	M. Lachaine	T. Skillen
E. Dawe	H. Maley	V. Watkins

APPENDIX D

HEARINGS

Public hearings were held in 14 cities in Canada including the capitals of the ten provinces and the Yukon Territory. Some 385 submissions were presented during the course of these hearings which lasted 67 days.

Public hearings were held in the following cities:

Ottawa	September 27,	1961
Halifax	October 30 to	
	November 1,	1961
St. John's	November 2 and 3,	1961
Charlottetown	November 7 and 8,	1961
Fredericton	November 9 and 10,	1961
Winnipeg	January 15-19,	1962
Regina	January 22-26,	1962
Edmonton	February 12-16,	1962
Victoria	February 19,	1962
Vancouver	February 20-24,	1962
Ottawa	March 19-23 and 26-27,	1962
Quebec City	April 9,	1962
Montreal	April 11-13 and 16-17,	1962
Toronto	May 7-11, 14-18, 22-25	
	and 28-31; June 1 and 2,	1962
Ottawa	October 16 and 17,	1962
Whitehorse	March 11,	1963

APPENDIX E

SUBMISSIONS RECEIVED AT PUBLIC HEARINGS

HALIFAX

The Government of Nova Scotia

City of Halifax

Dalhousie University

The Provincial Medical Board of Nova Scotia

The Canadian Medical Association

The Medical Society of Nova Scotia

Nova Scotia Dental Association

Nova Scotia Pharmaceutical Society

The Victorian Order of Nurses for Canada

Victorian Order of Nurses for Nova Scotia

The Nova Scotia Division of the Canadian Cancer Society

Canadian Health Insurance Association

The Nova Scotia Society for the Care of Crippled Children

The Nova Scotia Division of the Canadian Association for Retarded Children

The Nova Scotia Federation of Labour, C.L.C.

Halifax-Dartmouth and District Labour Council (C.L.C.)

The Canadian Mental Health Association—Nova Scotia Division

The Registered Nurses' Association of Nova Scotia

The Canadian Foundation for Poliomyelitis and Rehabilitation—
Nova Scotia Chapter

ST. JOHN'S

Department of Health of Newfoundland

The Victorian Order of Nurses for Canada on behalf of its Branches
in Newfoundland

Newfoundland Medical Association

Newfoundland Dental Society

The Newfoundland Federation of Labour
Newfoundland Society for the Care of Crippled Children and Adults
Newfoundland Tuberculosis Association
Association of Registered Nurses of Newfoundland

CHARLOTTETOWN

The Medical Society of Prince Edward Island
The Prince Edward Island Federation of Home and School
Associations
Prince Edward Island Dental Association
The Association of Nurses of Prince Edward Island
Prince Edward Island Pharmaceutical Association
Canadian Mental Health Association Prince Edward Island Division
Prince Edward Island Association for Retarded Children

FREDERICTON

The Department of Health Province of New Brunswick
Victorian Order of Nurses for New Brunswick
Maritime Hospital Service Association
New Brunswick Psychiatric Association
The New Brunswick Dental Society
The New Brunswick Dental Technicians Association
New Brunswick Pharmaceutical Society
The New Brunswick Medical Society
The New Brunswick Association of Registered Nurses
The New Brunswick Division of The Canadian Mental Health
Association
The New Brunswick Association for Retarded Children
A. R. Menzies & Sons Limited

WINNIPEG

The Government of Manitoba Introduction to main submission
The Government of Manitoba main submission
Faculty of Medicine, University of Manitoba
Community Welfare Planning Council
Victorian Order of Nurses for Canada on behalf of its Branches in
Manitoba

WINNIPEG

Manitoba Medical Service
 Survey of Voluntary Health Insurance in Canada—
 Canadian Conference on Health Care
 The Manitoba Medical Association
 Manitoba Psychiatric Association
 Manitoba Medical Association—Anaesthetic Section
 The College of Physicians and Surgeons of Manitoba
 The Faculty of Dentistry University of Manitoba
 The Manitoba Dental Association
 Manitoba Farmers Union
 The Society for Crippled Children and Adults of Manitoba
 General Practitioners Association of Manitoba
 Canadian Society of Radiological Technicians—Manitoba Division
 Manitoba Association of Registered Nurses
 The Winnipeg Chamber of Commerce
 The Organization of Crafts and Professions
 The Association for Retarded Children in Manitoba
 The Manitoba Pharmaceutical Association
 The Associated Hospitals of Manitoba
 Canadian Mental Health Association—Manitoba Division: SHARE
 The Catholic Hospital Conference of Manitoba
 Cerebral Palsy of Manitoba
 Manitoba Cancer Treatment and Research Foundation
 Irish Ambulance Service, St. Boniface Ambulance Service, St.
 Francis Ambulance Service
 The Manitoba Chambers of Commerce
 Senior Citizens Federation of Manitoba

REGINA

The Government of the Province of Saskatchewan
 The Canadian Mental Health Association—Saskatchewan Division
 College of Physicians and Surgeons of Saskatchewan, Canadian
 Medical Association, Saskatchewan Division
 Grace Stewart—Private Brief
 Saskatchewan Association for Retarded Children
 Victorian Order of Nurses for Saskatchewan

The Saskatchewan Registered Nurses' Association
 Saskatchewan Farmers Union
 Saskatchewan Federation of Labour C.L.C.
 Dr. A. Hoffer—Private Brief
 The Saskatchewan Pharmaceutical Association
 Canadian Society of Hospital Pharmacists—Saskatchewan Branch
 Co-operative Union of Saskatchewan
 Tuberculosis Treatment and Prevention in Saskatchewan
 The Canadian Public Health Association Saskatchewan Branch
 Saskatchewan Physical Therapists Association
 The Co-ordinating Council on Rehabilitation (Saskatchewan)
 Canadian Osteopathic Aid Society Saskatchewan Division
 Medical Services Incorporated
 The Saskatchewan Psychiatric Nurses Association
 Saskatchewan Psychiatric Association
 Group Medical Services
 The College of Medicine, University of Saskatchewan
 College of Home Economics University of Saskatchewan
 The Saskatoon Board of Trade
 Saskatchewan Wheat Pool
 The College of Dental Surgeons of Saskatchewan
 St. Peter's Hospital Melville, Sask.
 Saskatchewan Bureau on Alcoholism
 The Regina Grey Nuns' Hospital
 Department of Social Welfare and Rehabilitation—Province of
 Saskatchewan
 Saskatchewan Teachers' Federation
 The Saskatchewan Hospital Association
 The Saskatchewan Association of Chiropradists

EDMONTON

The Government of the Province of Alberta
 Victorian Order of Nurses for Alberta
 The Calgary Branch of the Academy of Religion and Mental Health
 The College of Physicians and Surgeons, Province of Alberta, The
 Canadian Medical Association, Alberta Division and The
 Faculty of Medicine, University of Alberta

EDMONTON

The University of Alberta, Faculty of Dentistry
The Alberta Pharmaceutical Association Inc.
Chaplaincy Advisory Committee of the Calgary General Hospital
The Alberta Dental Association
The University of Alberta Hospital
The Edmonton Hospital Advisory Council
The Alberta Division of the Canadian Mental Health Association
Alberta Southern Region, Canadian Mental Health Association
The Edmonton and District Labour Council
Alberta Teachers' Association—School Health Services
Medical Services (Alberta) Incorporated
The Alberta Podiatry Association
The Alberta Association of Registered Nurses
The Catholic Family and Child Service
Alberta Psychiatric Nurses' Association
Joint Submission by the Provincial Mental Institute, and Provincial
Mental Hospital
Alberta Association for Retarded Children
Alberta Psychiatric Association
The Edmonton Fluoridation Council
Alberta Registered Dietitians Association
The Edmonton Family Service Bureau
Associated Hospitals of Alberta
Holy Cross Hospital and Calgary General
Council of Community Services of Edmonton and District
Director of Community Services for Greater Edmonton
Dr. G. K. Higgins—Private Brief
The Edmonton Chamber of Commerce
Association of Chartered Physiotherapists of Alberta
The Canadian Public Health Association (Alberta Division)

VICTORIA

Mr. Robert M. Strachan, Leader of the Opposition, Leader of the
New Democratic Party, British Columbia
The Greater Victoria Metropolitan Board of Health
Victoria and District Dental Society

Canadian Naturopathic Association
 British Columbia Women's Institute
 Dr. P. Beregoff-Gillow—Private Brief

VANCOUVER

Canadian Medical Association, British Columbia Division
 Joint Submission of the College of Dental Surgeons of British
 Columbia and the British Columbia Dental Association
 The Public Denturists Society of B.C.
 The British Columbia Branch of the Canadian Public Health
 Association
 City of Vancouver
 Health Officers of British Columbia
 The College of Physicians and Surgeons of British Columbia
 British Columbia Old Age Pensioners Organization
 The Canadian Arthritis and Rheumatism Society, British Columbia
 Division
 Family Service Agency of Greater Vancouver
 Vancouver Branch of the National Health Federation
 The Pharmaceutical Association of the Province of British Columbia
 B. C. Hospitals' Association
 The Vancouver General Hospital
 The Young Women's Christian Association
 Medical Services Association
 B. C. Medical Services Incorporated
 Victorian Order of Nurses for British Columbia
 C.U. & C. Health Services Society
 B.C. Federation of Labour
 The Association for Retarded Children of British Columbia
 Metropolitan Hospital Planning Council
 The North Shore Union Board of Health
 A Report on Comprehensive Rehabilitation by the G. F. Strong
 Rehabilitation Centre
 Vancouver Board of Trade
 Community Chest and Councils of the Greater Vancouver Area
 Federated Legislative Council, Elder Citizens Association
 The Narcotic Addiction Foundation of British Columbia

VANCOUVER

The Western District Union of the International Union of Mine, Mill
and Smelter Workers (Canada)
The British Columbia Cancer Foundation
The Cerebral Palsy Association of British Columbia
The Cerebral Palsy Association of Greater Vancouver
British Columbia Speech and Hearing Association
The British Columbia Association of Chiropodists (Podiatrists)
The Pure Food Guild of B.C., Inc.
Burnaby Chamber of Commerce
Canadian Society of Radiological Technicians—British Columbia
The Canadian Mental Health Association, British Columbia Division

OTTAWA

The Canadian Chamber of Commerce
Paediatric Centre
The Canadian Federation of Agriculture
The Civil Service Federation of Canada
Canadian Dental Association
The Canadian Association of Medical Students and Interns
The Canadian Arthritis and Rheumatism Society
The Royal College of Physicians and Surgeons of Canada
Professional Institute of the Public Service of Canada
K.O. Bardwell—Private Brief
Canadian Physiotherapy Association
Canadian Tuberculosis Association
The Great-West Life Assurance Company and Metropolitan Life
Insurance Company
Medical Council of Canada
The St. John Ambulance
The Canadian Anaesthetists' Society
Federated Women's Institutes of Canada
Canadian Nurses' Association
Canadian Highway Safety Council
The Royal Canadian Legion
Welfare Council of Ottawa

QUEBEC CITY

Les Services de Santé du Québec
Confédération des Syndicats Nationaux

MONTREAL

L'Association des Médecins de Langue Française du Canada
The Montreal Dental Club
La Société Dentaire de Montréal
L'Association des Otolaryngologistes de la Province de Québec
The College of Dental Surgeons of the Province of Quebec
The Mount Royal Dental Society
The Quebec Society of Occupational Therapists
Victorian Order of Nurses for the Province of Quebec
L'Association des Infirmières de la Province de Québec
Brief of the Province of Quebec Physiotherapists Incorporated
Société des Infirmières Visiteuses
Collège des Médecins et Chirugiens de la Province de Québec
The Canadian Paediatric Society
Canadian Neurological Society
The Association of Obstetricians and Gynaecologists of the Province
of Quebec
Provision of Medical Services through Group Practice
L'Association des Administrateurs d'Hôpitaux de la Province de
Québec
Province of Quebec Osteopathic Association
Royal Victoria Hospital
L'Association Canadienne pour la Santé Mentale Division du Québec
L'Association des Médecins-Chirugiens en Pratique Générale du
District Médical de Montréal
The Canadian Psychological Association
"Plan Larue" d'Assurance Santé
The Catholic Hospital Association of Canada
Division du Québec de l'Association Médicale Canadienne
L'Association des Médecins de Langue Française du Canada, Filiale
du Québec
The International Ladies' Garment Workers' Union

TORONTO

Ontario Medical Association
Canadian Association for Retarded Children
The Ontario Association for Retarded Children
The Canadian Conference on Children
Physicians' Services Incorporated
Windsor Medical Services, Incorporated
Co-operative Medical Services Federation of Ontario
Trans-Canada Medical Plans (1960)
Associated Medical Services, Incorporated
The Registered Nurses' Association of Ontario
Canadian Conference of University Schools of Nursing
Registered Nurses' Association of British Columbia
The Canadian Psychiatric Association
Canadian Heart Foundation
Canadian Osteopathic Association
Canadian Academy of Allergy
Canadian Council on Alcoholism
Canadian Hospital Association
Ontario Hospital Association
Medical Liberty League
The Ontario Retail Pharmacists' Association
Prescription Services Incorporated
Canadian Library Association: The Committee on Medical Science Libraries
The Board of Examiners in Optometry, Province of Ontario
The Canadian Association of Optometrists
The Optometrical Association of Ontario
The Canadian Ophthalmological Society
Victorian Order of Nurses (Ontario)
Victorian Order of Nurses for Canada
The Association of Canadian Medical Colleges
Connaught Medical Research Laboratories, University of Toronto
Statement, President, University of Toronto
Faculty of Medicine, University of Toronto
Teaching Hospitals of the University of Toronto

The Faculty of Dentistry, University of Toronto
Faculty of Pharmacy, University of Toronto
School of Hygiene, University of Toronto
School of Physical and Health Education, University of Toronto
School of Nursing, University of Toronto
Banting and Best, Department of Medical Research, University of
Toronto
The Canadian Medical Association
College of General Practice of Canada
Canadian Health Insurance Association
The Canadian Cancer Society
The National Cancer Institute of Canada
The Ontario Cancer Treatment and Research Foundation
Canadian Council on Hospital Accreditation
The Faculty of Household Science, University of Toronto
The Canadian Manufacturers' Association
Canadian Chiropractic Association
Communist Party of Canada
Sudbury District Medical Society
Dr. Matthew J. Lynch—Private Brief
Canadian Pharmaceutical Manufacturers Association
Canadian Pharmaceutical Manufacturers Association, Medical Section
The Ontario College of Pharmacy
The Canadian Foundation for the Advancement of Pharmacy
Canadian Society of Hospital Pharmacists
Canadian Society of Hospital Pharmacists, Ontario Branch
The Canadian Red Cross Society—The Role of One Voluntary
Organization in Canada's Health Services
The College of Physicians and Surgeons of Ontario
The Canadian Cardiovascular Society
The Canadian Mental Health Association, Ontario Division
The Canadian Mental Health Association
Ontario Psychiatric Association
The Ontario Society for Crippled Children
Ontario Association for Emotionally Disturbed Children
The Canadian Public Health Association
The Ontario Chamber of Commerce

TORONTO

Canadian Association of Health, Physical Education and Research
United Electrical, Radio and Machine Workers of America (UE)
The Canadian Association of Occupational Therapy
Canadian Council for Crippled Children and Adults
The Nova Scotia Rehabilitation Council, Incorporated
The Canadian Association of Physical Medicine and Rehabilitation
Dr. Charles Okun—Private Brief
The Continuing Committee of Canadian Conference on Physiotherapy
The Board of Directors of Physiotherapy of Ontario
The Ontario Society of Physiotherapy
The Association of Remedial Gymnasts (Ontario)
Zifkin Biological Laboratory Limited
Canadian Labour Congress
Toronto and District Ex-Servicemen's Advisory Committee
Canadian Conference of Pharmaceutical Faculties
The Canadian Pharmaceutical Association, Incorporated
Dr. S. S. Raphael, Private Brief
The Canadian Association of Medical Record Librarians
The Royal College of Dental Surgeons of Ontario and The Ontario Dental Association
Dr. P. Laird Gibbs, Private Brief
The Canadian Rheumatism Association
Dr. Leo J. Mahoney, Private Brief
The Health League of Canada
The Canadian Association of Social Workers
Young Women's Christian Association of Canada
Canadian Plumbing and Mechanical Contractors Association
The Board of Trade of Metropolitan Toronto
Canadian Society for Clinical Chemistry
Canadian Society for Clinical Investigation
The Canadian Diabetic Association
The Canadian Home and School and Parent-Teacher Federation

The National Council of Women of Canada
The Canadian Association of Radiologists
The Ontario Dietetic Association
The Canadian Society of Radiological Technicians
Ontario Society of Radiological Technicians
Dr. N. L. Goodwin, Private Brief
The Ontario Public Health Association
The Canadian Hemophilia Society, Ontario Chapter
The Canadian Psychoanalytic Society and The Canadian Institute
of Psychoanalysis
Christian Science Committee on Publication for Ontario
The Canadian Home Economics Association
The Metropolitan Windsor Health Unit
The Canadian National Institute for the Blind
The Anglican Church of Canada
The United Church of Canada
Boys Village
The Committee on Public Welfare, Fire and Legislation, The City
of Toronto
Mrs. Marguerite Miles, Private Brief
The Canadian Welfare Council
Social Planning Council of Metropolitan Toronto
Advisory Committee, Pilot Home Care Program, City of Toronto
The Planned Parenthood Association
The Society of Obstetricians and Gynaecologists of Canada
The Society of Obstetricians and Gynaecologists of Toronto
Canadian Association of Pathologists
Canadian Society of Laboratory Technologists
Ontario Association of Medical Clinics
Ontario Osteopathic Association
The Canadian Podiatry Association
Interprovincial Association of Prosthetists and Orthotists of Canada
Mrs. A. Kennedy, Private Brief
Citizens Health Association

TORONTO

Dr. J. W. McGillivray, Private Brief
St. Michael's Hospital
Northwestern General Hospital
Ontario Federation of Labour—C.L.C.
Dr. C. Collins-Williams, Private Brief
Dr. M. A. Dreyfus, Private Brief
Congress of Canadian Women
Drs. A. G. Bodrug, D. S. Vozoris, John Magder, C. M. Godfrey
and R. M. Pilkey, Private Brief
Committee for the Furtherance of Creative Research in the Pharma-
ceutical and Allied Industries
Ontario Society of Oral Surgeons

OTTAWA

The Province of Ontario

WHITEHORSE, YUKON

Mr. Peter Berg, Private Brief
Whitehorse Dental Clinic
The Yukon Medical Association
Mr. Donald E. Taylor, Private Brief

OTHER SUBMISSIONS RECEIVED

Ontario Psychological Association Inc.
A. Lindhorst
The Canadian Haemophilia Society—The Medical Advisory Board
Dr. Donald Mitchell
Mrs. Thelma Hopwood
Major A. N. Risk
Canadian Society of Internal Medicine
Canadian Osteopathic Aid Society (Quebec Branch)
Catholic Schools of Nursing in New Brunswick
Patrick D. Ferg

Archibald MacDougall

Alberta Dental Nurses and Assistants Association

Farm Women's Union of Alberta

Mrs. M. M. Tait Evans

The British Columbia Dietetic Association

Mrs. Mary Lefebvre

A. G. Gibson

Association des Fabricants du Québec—Produits Pharmaceutiques

Canadian Agricultural Chemicals Association (Accidental Poisoning)

The Quebec Federation of Labour

Manitoba Clinics and Group Practice

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